

s644LISTGB80
SEQUENCE LISTING

<110> CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE
UNIVERSITE DE MONTPELLIER 2
WEILL Mylène
FORT Philippe
RAYMOND Michel
PASTEUR Nicole

<120> Novel acetylcholinesterase gene responsible for insecticide resistance and applications thereof

<130> F644FR92

<140>
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<150> FR0207622
<151> 2002-06-20

<150> FR0213799
<151> 2002-11-05

<160> 129

<170> PatentIn Ver. 2.1

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<212> PRT
<213> Anopheles gambiae

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35 40 45
Ala Glu Lys Trp Thr Gly Val Leu Asn Thr Thr Pro Pro Asn Ser
50 55 60
Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala Thr
65 70 75 80
Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile Asn
85 90 95
Val Val Ala Pro Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu Trp
100 105 110
Ile Phe Gly Gly Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val Tyr
115 120 125
Asp His Arg Ala Leu Ala Ser Glu Glu Asn Val Ile Val Val Ser Leu
130 135 140
Gln Tyr Arg Val Ala Ser Leu Gly Phe Leu Phe Leu Gly Thr Pro Glu
145 150 155 160

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165 170 175

Val Arg Asp Asn Ile His Arg Phe Gly Gly Asp Pro Ser Arg Val Thr
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Leu Phe Gly Glu Ser Ala Gly Ala Val Ser Val Ser Leu His Leu Leu
195 200 205

Ser Ala Leu Ser Arg Asp Leu Phe Gln Arg Ala Ile Leu Gln Ser Gly
210 215 220

Ser Pro Thr Ala Pro Trp Ala Leu Val Ser Arg Glu Glu Ala Thr Leu
225 230 235 240

Arg Ala Leu Arg Leu Ala Glu Ala Val Gly Cys Pro His Glu Pro Ser
245 250 255

Lys Leu Ser Asp Ala Val Glu Cys Leu Arg Gly Lys Asp Pro His Val
260 265 270

Leu Val Asn Asn Glu Trp Gly Thr Leu Gly Ile Cys Glu Phe Pro Phe
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Val Pro Val Val Asp Gly Ala Phe Leu Asp Glu Thr Pro Gln Arg Ser
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Leu Ala Ser Gly Arg Phe Lys Lys Thr Glu Ile Leu Thr Gly Ser Asn
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Thr Glu Glu Gly Tyr Tyr Phe Ile Ile Tyr Tyr Leu Thr Glu Leu Leu
325 330 335

Arg Lys Glu Glu Gly Val Thr Val Thr Arg Glu Glu Phe Leu Gln Ala
340 345 350

Val Arg Glu Leu Asn Pro Tyr Val Asn Gly Ala Ala Arg Gln Ala Ile
355 360 365

Val Phe Glu Tyr Thr Asp Trp Thr Glu Pro Asp Asn Pro Asn Ser Asn
370 375 380

Arg Asp Ala Leu Asp Lys Met Val Gly Asp Tyr His Phe Thr Cys Asn
385 390 395 400

Val Asn Glu Phe Ala Gln Arg Tyr Ala Glu Glu Gly Asn Asn Val Tyr
405 410 415

Met Tyr Leu Tyr Thr His Arg Ser Lys Gly Asn Pro Trp Pro Arg Trp
420 425 430

Thr Gly Val Met His Gly Asp Glu Ile Asn Tyr Val Phe Gly Glu Pro
435 440 445

Leu Asn Pro Thr Leu Gly Tyr Thr Glu Asp Glu Lys Asp Phe Ser Arg
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Lys Ile Met Arg Tyr Trp Ser Asn Phe Ala Lys Thr Gly Asn Pro Asn
465 470 475 480

Pro Asn Thr Ala Ser Ser Glu Phe Pro Glu Trp Pro Lys His Thr Ala
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<220>
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<222> (1)..(1932)

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atc gtg gtg tcg ctg cag tac cgc	gtg gcc agt ctg ggc ttc ctg ttt	672	
Ile Val Val Ser Leu Gln Tyr Arg Val	Ala Ser Leu Gly Phe Leu Phe		
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Leu Gly Thr Pro Glu Ala Pro Gly Asn	Ala Gly Leu Phe Asp Gln Asn		
225	230	235	240
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Leu Ala Leu Arg Trp Val Arg Asp Asn	Ile His Arg Phe Gly Gly Asp		
245	250	255	
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Pro Ser Arg Val Thr Leu Phe Gly Glu	Ser Ala Gly Ala Val Ser Val		
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Glu Glu Ala Thr Leu Arg Ala Leu Arg	Leu Ala Glu Ala Val Gly Cys		
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Pro His Glu Pro Ser Lys Leu Ser Asp	Ala Val Glu Cys Leu Arg Gly		
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Cys Glu Phe Pro Phe Val Pro Val Val	Asp Gly Ala Phe Leu Asp Glu		
355	360	365	
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Thr Pro Gln Arg Ser Leu Ala Ser Gly	Arg Phe Lys Lys Thr Glu Ile		
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Leu Thr Gly Ser Asn Thr Glu Glu Gly	Tyr Tyr Phe Ile Ile Tyr Tyr		
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ctg acc gag ctg ctg cgc aag gag gag	ggc gtg acc gtg acg cgc gag	1248	
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gag ttc ctg cag gcg gtg cgc gag ctc	aac ccg tac gtg aac ggg gcg	1296	
Glu Phe Leu Gln Ala Val Arg Glu Leu	Asn Pro Tyr Val Asn Gly Ala		
420	425	430	

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gcc cgg cag gcg atc gtg ttc gag tac acc gac tgg acc gag ccg gac Ala Arg Gln Ala Ile Val Phe Glu Tyr Thr Asp Trp Thr Glu Pro Asp 435 440 445	1344
aac ccg aac agc aac cg ^g gac gc ^g ctg gac aag atg gtg ggc gac tat Asn Pro Asn Ser Asn Arg Asp Ala Leu Asp Lys Met Val Gly Asp Tyr 450 455 460	1392
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ccc aag cac acc gg ^c cac gga cg ^g cac tat ctg gag ctg gg ^c ctc aac Pro Lys His Thr Ala His Gly Arg His Tyr Leu Glu Leu Gly Leu Asn 565 570 575	1728
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Cys Leu Tyr Ile Asn Val Val Ala Pro Arg Pro Arg Pro Lys Asn Ala
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Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser Gly Thr Ala
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Leu Gly Thr Pro Glu Ala Pro Gly Asn Ala Gly Leu Phe Asp Gln Asn
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Leu Ala Leu Arg Trp Val Arg Asp Asn Ile His Arg Phe Gly Asp
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Pro Ser Arg Val Thr Leu Phe Gly Glu Ser Ala Gly Ala Val Ser Val
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Ser Leu His Leu Leu Ser Ala Leu Ser Arg Asp Leu Phe Gln Arg Ala
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Cys Glu Phe Pro Phe Val Pro Val Val Asp Gly Ala Phe Leu Asp Glu
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Thr Pro Gln Arg Ser Leu Ala Ser Gly Arg Phe Lys Lys Thr Glu Ile
370 375 380

Leu Thr Gly Ser Asn Thr Glu Glu Gly Tyr Tyr Phe Ile Ile Tyr Tyr
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Leu Thr Glu Leu Leu Arg Lys Glu Glu Gly Val Thr Val Thr Arg Glu
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Glu Phe Leu Gln Ala Val Arg Glu Leu Asn Pro Tyr Val Asn Gly Ala
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Ala Arg Gln Ala Ile Val Phe Glu Tyr Thr Asp Trp Thr Glu Pro Asp
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Asn Pro Asn Ser Asn Arg Asp Ala Leu Asp Lys Met Val Gly Asp Tyr
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His Phe Thr Cys Asn Val Asn Glu Phe Ala Gln Arg Tyr Ala Glu Glu
465 470 475 480

Gly Asn Asn Val Tyr Met Tyr Leu Tyr Thr His Arg Ser Lys Gly Asn
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Pro Trp Pro Arg Trp Thr Gly Val Met His Gly Asp Glu Ile Asn Tyr
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Val Phe Gly Glu Pro Leu Asn Pro Thr Leu Gly Tyr Thr Glu Asp Glu
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580 585 590

Lys Lys Tyr Leu Pro Gln Leu Val Ala Ala Thr Ser Asn Leu Pro Gly
595 600 605

Pro Ala Pro Pro Ser Glu Pro Cys Glu Ser Ser Ala Phe Phe Tyr Arg
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<212> DNA
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cca gca ccg ccc agt gaa ccg tgc gaa agc agc gca ttt ttt tac cga Pro Ala Pro Pro Ser Glu Pro Cys Glu Ser Ser Ala Phe Phe Tyr Arg 610 615 620				1872
cct gat ctg atc gtg ctg ctg gtg tcg ctg ctt acg gcg acc gtc aga Pro Asp Leu Ile Val Leu Leu Val Ser Leu Leu Thr Ala Thr Val Arg 625 630 635 640				1920
ttc ata caa taa Phe Ile Gln				1932

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Val Arg Ile Ile Asp Ala Glu Leu Gly Thr Leu Glu His Val His Ser
35 40 45
Gly Ala Thr Pro Arg Arg Arg Gly Leu Thr Arg Arg Glu Ser Asn Ser
50 55 60

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Asp Ala Asn Asp Asn Asp Pro Leu Val Val Asn Thr Asp Lys Gly Arg
65 70 75 80

Ile Arg Gly Ile Thr Val Asp Ala Pro Ser Gly Lys Lys Val Asp Val
85 90 95

Trp Leu Gly Ile Pro Tyr Ala Gln Pro Pro Val Gly Pro Leu Arg Phe
100 105 110

Arg His Pro Arg Pro Ala Glu Lys Trp Thr Gly Val Leu Asn Thr Thr
115 120 125

Thr Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp
130 135 140

Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp
145 150 155 160

Cys Leu Tyr Ile Asn Val Val Ala Pro Arg Pro Arg Pro Lys Asn Ala
165 170 175

Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser Gly Thr Ala
180 185 190

Thr Leu Asp Val Tyr Asp His Arg Ala Leu Ala Ser Glu Glu Asn Val
195 200 205

Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe Leu Phe
210 215 220

Leu Gly Thr Pro Glu Ala Pro Gly Asn Ala Gly Leu Phe Asp Gln Asn
225 230 235 240

Leu Ala Leu Arg Trp Val Arg Asp Asn Ile His Arg Phe Gly Asp
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Pro Ser Arg Val Thr Leu Phe Gly Glu Ser Ala Gly Ala Val Ser Val
260 265 270

Ser Leu His Leu Leu Ser Ala Leu Ser Arg Asp Leu Phe Gln Arg Ala
275 280 285

Ile Leu Gln Ser Gly Ser Pro Thr Ala Pro Trp Ala Leu Val Ser Arg
290 295 300

Glu Glu Ala Thr Leu Arg Ala Leu Arg Leu Ala Glu Ala Val Gly Cys
305 310 315 320

Pro His Glu Pro Ser Lys Leu Ser Asp Ala Val Glu Cys Leu Arg Gly
325 330 335

Lys Asp Pro His Val Leu Val Asn Asn Glu Trp Gly Thr Leu Gly Ile
340 345 350

Cys Glu Phe Pro Phe Val Pro Val Val Asp Gly Ala Phe Leu Asp Glu
355 360 365

Thr Pro Gln Arg Ser Leu Ala Ser Gly Arg Phe Lys Lys Thr Glu Ile
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Leu Thr Gly Ser Asn Thr Glu Glu Gly Tyr Tyr Phe Ile Ile Tyr Tyr
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Leu Thr Glu Leu Leu Arg Lys Glu Glu Gly Val Thr Val Thr Arg Glu
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Glu Phe Leu Gln Ala Val Arg Glu Leu Asn Pro Tyr Val Asn Gly Ala
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Ala Arg Gln Ala Ile Val Phe Glu Tyr Thr Asp Trp Thr Glu Pro Asp
435 440 445

Asn Pro Asn Ser Asn Arg Asp Ala Leu Asp Lys Met Val Gly Asp Tyr
450 455 460

His Phe Thr Cys Asn Val Asn Glu Phe Ala Gln Arg Tyr Ala Glu Glu
465 470 475 480

Gly Asn Asn Val Tyr Met Tyr Leu Tyr Thr His Arg Ser Lys Gly Asn
485 490 495

Pro Trp Pro Arg Trp Thr Gly Val Met His Gly Asp Glu Ile Asn Tyr
500 505 510

Val Phe Gly Glu Pro Leu Asn Pro Thr Leu Gly Tyr Thr Glu Asp Glu
515 520 525

Lys Asp Phe Ser Arg Lys Ile Met Arg Tyr Trp Ser Asn Phe Ala Lys
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Thr Gly Asn Pro Asn Pro Asn Thr Ala Ser Ser Glu Phe Pro Glu Trp
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Lys Lys Tyr Leu Pro Gln Leu Val Ala Ala Thr Ser Asn Leu Pro Gly
595 600 605

Pro Ala Pro Pro Ser Glu Pro Cys Glu Ser Ser Ala Phe Phe Tyr Arg
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Phe Ile Gln

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<212> PRT

<213> Culex pipiens strain S-LAB

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Leu G_{3y} Ser Lys Tyr Ser Gln Ser Ser Ser Leu Ser Ser Ser Ser Gln
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Ser Ser Ser Ser Leu Ala Glu Glu Ala Thr Leu Asn Lys Asp Ser Asp
 65 70 75 80

Ala Phe Phe Thr Pro Tyr Ile Gly His Gly Asp Ser Val Arg Ile val
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Val Thr Leu Phe Gly Glu Ser Ala Gly Ala Val Ser Val Ser Leu His
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Thr Leu Arg Ala Leu Arg Leu Ala Glu Ala Val Asn Cys Pro His Asp

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Pro Phe Val Pro Val Val Asp Gly	Ala Phe Leu Asp Glu Thr Pro Gln	
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Arg Ser Leu Ala Ser Gly Arg Phe	Lys Lys Thr Asp Ile Leu Thr Gly	
435	440	445
Ser Asn Thr Glu Glu Gly Tyr	Tyr Phe Ile Ile Tyr Tyr Leu Thr Glu	
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Val Phe Met Tyr Leu Tyr Thr His Arg Ser	Lys Gly Asn Pro Trp Pro	
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Arg Trp Thr Gly Val Met His Gly Asp Glu	Ile Asn Tyr Val Phe Gly	
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Ser Arg Lys Ile Met Arg Tyr Trp Ser Asn Phe Ala	Lys Thr Gly Asn	
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Thr Ala His Gly Arg His Tyr Leu Glu Leu Gly	Leu Asn Thr Thr Phe	
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Val Gly Arg Gly Pro Arg Leu Arg Gln Cys Ala Phe Trp	Lys Lys Tyr	
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Pro Ser Val Pro Cys Glu Ser Ser Ser Thr Ser Tyr	Arg Ser Thr Leu	
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<213> Culex pipiens

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Ser Lys Gly Asn Pro Trp Pro Arg Trp Thr Gly Val Met His Gly Asp
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<213> Aedes aegypti

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35 40 45
Ser Lys Gly Asn Pro Trp Pro Arg Trp Thr Gly Val Met His Gly Asp
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Glu Ile Asn Tyr Val Phe Gly Glu Pro Leu Asn Ser Asp Leu Gly Tyr
65 70 75 80
Met Glu Asp Glu Lys Asp Phe Ser Arg Lys Ile
85 90

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<211> 91
<212> PRT
<213> Aedes albopictus

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Ser Lys Gly Asn Pro Trp Pro Arg Trp Thr Gly Val	Met His Gly Asp	
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<213> Anopheles darlingi

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Tyr Ala Glu Glu Gly Asn Asn Val	Tyr Met Tyr Leu Tyr Thr His Arg	
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Ser Lys Gly Asn Pro Trp Pro Arg Trp Thr Gly Val	Met His Gly Asp	
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Glu Ile Asn Tyr Val Phe Gly Glu Pro Leu Asn Pro Thr Leu Gly Tyr			
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Thr Asp Asp Glu Lys Gly Phe Ser Arg Lys Ile		
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<213> Anopheles sundaicus

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Tyr Ala Glu Glu Gly Asn Asn Val	Tyr Met Tyr Leu Tyr Thr His Arg	
35	40	45

Ser Lys Gly Asn Pro Trp Pro Arg Trp Thr Gly Val	Met His Gly Asp	
50	55	60

Glu Ile Asn Tyr Val Phe Gly Glu Pro Leu Asn Pro Thr Leu Gly Tyr			
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85 90

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Ser Lys Gly Asn Pro Trp Pro Arg Trp Thr Gly Val Met His Gly Asp
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Glu Ile Asn Tyr Val Phe Gly Glu Pro Leu Asn Pro Ser Leu Gly Tyr
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Thr Glu Asp Glu Lys Asp Phe Ser Arg Lys Ile
85 90

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35 40 45
Ser Lys Gly Asn Pro Trp Pro Arg Trp Thr Gly Val Met His Gly Asp
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Glu Ile Asn Tyr Val Phe Gly Glu Pro Leu Asn Pro Ser Leu Gly Tyr
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<213> Anopheles arabiensis

<400> 15

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Tyr Ala Glu Glu Gly Asn Asn Val Tyr Met Tyr Leu Tyr Thr His Arg
35 40 45

Ser Lys Gly Asn Pro Trp Pro Arg Trp Thr Gly Val Met His Gly Asp
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Glu Ile Asn Tyr Val Phe Gly Glu Pro Leu Asn Pro Thr Leu Gly Tyr
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35 40 45

Ser Lys Gly Asn Pro Trp Pro Arg Trp Thr Gly Val Met His Gly Asp
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Thr Glu Asp Glu Lys Asp Phe Ser Arg Lys Ile
85 90

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20 25 30

Tyr Ala Glu Glu Gly Asn Asn Val Tyr Met Tyr Leu Tyr Thr His Arg
35 40 45

Ser Lys Gly Asn Pro Trp Pro Arg Trp Thr Gly Val Met His Gly Asp
50 55 60

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Glu Ile Asn Tyr Val Phe Gly Glu Pro Leu Asn Pro Gly Leu Gly Tyr
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<213> Anopheles sacharovi

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35 40 45

Ser Lys Gly Asn Pro Trp Pro Arg Trp Thr Gly Val Met His Gly Asp
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Glu Ile Asn Tyr Val Phe Gly Glu Pro Leu Asn Pro Ser Leu Gly Tyr
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<213> Anopheles stephensi

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Thr Asp Asp Glu Lys Asp Phe Ser Arg Lys Ile
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35 40 45
Ser Lys Gly Asn Pro Trp Pro Arg Trp Thr Gly Val Met His Gly Asp
50 55 60
Glu Ile Asn Tyr Val Phe Gly Glu Pro Leu Asn Pro Thr Leu Gly Tyr
65 70 75 80
Thr Asp Asp Glu Lys Gly Phe Ser Arg Lys Ile
85 90

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<213> *Anopheles nili*

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35 40 45
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50 55 60
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Thr Glu Asp Glu Lys Asp Phe Ser Arg Lys Met
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<212> DNA

<213> Anopheles gambiae strain KISUMU

<400> 23

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<213> Culex pipiens strain S-LAB

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<213> *Anopheles sundaicus*

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accgaggacg agaaagactt tagccggaag atc 273

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85 90 95Ile Pro Thr Ser Thr Arg Ser Gln Pro Leu Ala Val Met Val Trp Ile
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145 150 155 160Gly Asn Ala Gly Leu Leu Asp Gln Gln Leu Ala Leu Lys Trp Val Arg
165 170 175Asp Asn Ile Arg Ala Phe Gly Gly Asn Pro Asp Asn Val Thr Leu Met
180 185 190Gly Glu Ser Ala Gly Ala Ala Ser Ile Gly Leu His Thr Val Ala Pro
195 200 205Ser Ser Arg Gly Leu Phe Asn Arg Val Ile Phe Gln Ser Gly Asn Gln
210 215 220Met Thr Pro Trp Ser Thr Ile Ser Leu Pro Thr Ser Leu Asn Arg Thr
225 230 235 240Arg Ile Leu Ala Ala Asn Leu Arg Cys Pro Asn Pro Arg Thr Ser Ser
245 250 255

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Glu Leu Asp Val Leu Thr Cys Leu Arg Ser His Ser Ala Val Asp Val
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Phe Ser Asn Ser Trp Ile Thr Gln Glu Ile Phe Asp Phe Pro Phe Val
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Pro Val His Gly Thr Ser Phe Leu Pro Glu His Pro His Glu Val Thr
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Arg Lys Gly Glu Gln Ala Asp Val Asp Val Met Ala Gly His Asn Thr
305 310 315 320

Asn Glu Gly Ser Tyr Phe Thr Leu Tyr Thr Val Pro Gly Phe Asn Ile
325 330 335

Ser Ser Gln Ser Ile Leu Ser Lys Lys Glu Tyr Ile Asp Gly Ile Ala
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Leu Ser Gly Ile Lys Thr Asn Glu Leu Gly Arg Ser Gly Ala Ala Phe
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Met Tyr Ala Asp Trp Glu Asn Pro Asp Asn Val Leu Gln Tyr Arg Asp
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Gly Val Asn Glu Ile Val Gly Asp Phe His Val Val Cys Pro Thr Val
385 390 395 400

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Leu Tyr His Leu Ser Tyr Arg Leu Ser Asn Asn Pro Trp Pro Ala Trp
420 425 430

Met Gly Val Met His Gly Tyr Glu Ile Glu Leu Met Phe Gly Thr Pro
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Trp Phe Gly Thr Ser Gln Phe Thr Ser Gly Tyr Asn Asp Val Asp Arg
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Ser Val Ser Arg Arg Met Val His Tyr Trp Thr Asn Phe Ala Lys Phe
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Gly Asn Pro Asn Gly Leu Arg Ser Ala Asn Glu Leu Asp Leu Arg Ser
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Thr Asp Trp Pro Arg Phe Asp Asp Val Arg Gln Arg Tyr Leu Glu Ile
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Gly Ile Asp Asp Asp Val Met Gly Pro Phe Pro Asn Ser Phe Arg Cys
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Ala Phe Trp Glu Arg Tyr Leu Pro Ser Leu Lys Leu Ala Ser Ser Ala
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Asp Met Asp Glu Val Glu Thr Lys Trp Lys Ile Glu Phe Asn Arg Trp
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<213> Ciona savignyi

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65 70 75 80
Ser Pro Asn Ala Lys Ser Glu Asp Cys Leu Tyr Leu Asn Val Trp Thr
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Pro Val Arg Ser Arg His Ala Glu Pro Leu Ala Val Leu Val Trp Ile
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115 120 125
Gly Arg Tyr Leu Ala Ala Thr Gly Gly Val Val Val Val Ser Leu Asn
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Pro Gly Asn Val Gly Leu Leu Asp Gln Gln Leu Ala Leu Lys Trp Val
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Arg Asp Asn Ile Arg Glu Phe Gly Gly Asn Pro Asn Asn Val Thr Val
180 185 190
Met Gly Glu Ser Ala Gly Ala Ala Ser Ile Gly Leu His Thr Ile Ala
195 200 205
Pro Ser Ser Arg Gly Leu Phe Ser Arg Val Ile Leu Gln Ser Gly Asn
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Gln Met Thr Pro Trp Ser Thr Ile Ser Leu Glu Thr Ser Leu Asn Arg
225 230 235 240
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245 250 255
Ser Glu Ala Asp Ile Leu Ala Cys Leu Arg Thr His Thr Ala Asn Glu
260 265 270
Val Phe Ala Gly Ser Trp Ile Thr Lys Glu Ile Phe Asp Phe Pro Phe
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Val Pro Val His Gly Thr Thr Phe Leu Pro Glu His Pro His Glu Val

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Asp Leu Ser Gly Leu Lys Thr Asn Thr Met Gly Arg Ser Ala Ala Ala		
355	360	365
Phe Met Tyr Thr Asp Trp Glu Asn Leu Asp Asn Glu Leu Gln Tyr Arg		
370	375	380
Asp Ala Val Asn Glu Ile Val Gly Asp Phe His Val Val Cys Pro Thr		
385	390	395
Val Leu Val Ser Lys Arg His Ser Asn Ser Phe Pro Asn Arg Asn Val		
405	410	415
Phe Leu Tyr His Leu Ser Tyr Arg Val Ser Thr Asn Pro Trp Pro Ile		
420	425	430
Trp Met Gly Val Met His Gly Tyr Glu Ile Glu Leu Met Phe Gly Thr		
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Pro Trp Phe Gly Asn Ser Lys Phe Thr Arg Gly Tyr Ser Asp Leu Asp		
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Arg Ser Val Ser Arg Arg Met Val Arg Tyr Trp Thr Asn Phe Ala Lys		
465	470	475
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Asp Trp Pro Arg Phe Asn Asp Val Thr Gln Arg Tyr Leu Glu Ile Ala		
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Phe Trp Gln Lys Tyr Leu Pro Ser Leu Gln Leu Ala Ser Ser Asn Met		
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Asp Glu Val Glu Thr Lys Trp Lys Ile Glu Phe His Arg Trp Ser Glu		
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Phe Ala Lys Pro Pro Val Asp Ser Leu Arg Phe Lys Lys Pro Val Pro
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Ala Glu Pro Trp His Gly Val Leu Asp Ala Thr Arg Leu Pro Pro Ser
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Cys Ile Gln Glu Arg Tyr Glu Tyr Phe Pro Gly Phe Ala Gly Glu Glu
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Met Trp Asn Pro Asn Thr Asn Val Ser Glu Asp Cys Leu Tyr Leu Asn
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Ile Trp Val Pro Thr Lys Thr Arg Leu Arg His Gly Arg Gly Leu Asn
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Phe Gly Ser Asn Asp Tyr Phe Gln Asp Asp Asp Phe Gln Arg Gln
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His Gln Ser Lys Gly Gly Leu Ala Met Leu Val Trp Ile Tyr Gly Gly
165 170 175

Gly Phe Met Ser Gly Thr Ser Thr Leu Asp Ile Tyr Asn Ala Glu Ile
180 185 190

Leu Ala Ala Val Gly Asn Val Ile Val Ala Ser Met Gln Tyr Arg Val
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Glu Asp Ala Pro Gly Asn Met Gly Met Trp Asp Gln Ala Leu Ala Ile
225 230 235 240

Arg Trp Leu Lys Glu Asn Ala Lys Ala Phe Gly Gly Asp Pro Asp Leu
245 250 255

Ile Thr Leu Phe Gly Glu Ser Ala Gly Gly Ser Ser Val Ser Leu His
260 265 270

Leu Leu Ser Pro Val Thr Arg Gly Leu Ser Lys Arg Gly Ile Leu Gln
275 280 285

Ser Gly Thr Leu Asn Ala Pro Trp Ser His Met Thr Ala Glu Lys Ala
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Leu Gln Ile Ala Glu Gly Leu Ile Asp Asp Cys Asn Cys Asn Leu Thr
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Met Leu Lys Glu Ser Pro Ser Thr Val Met Gln Cys Met Arg Asn Val
325 330 335

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Asp Ala Lys Thr Ile Ser Val Gln Gln Trp Asn Ser Tyr Ser Gly Ile
340 345 350

Leu Gly Phe Pro Ser Ala Pro Thr Ile Asp Gly Val Phe Met Thr Ala
355 360 365

Asp Pro Met Thr Met Leu Arg Glu Ala Asn Leu Glu Gly Ile Asp Ile
370 375 380

Leu Val Gly Ser Asn Arg Asp Glu Gly Thr Tyr Phe Leu Leu Tyr Asp
385 390 395 400

Phe Ile Asp Tyr Phe Glu Lys Asp Ala Ala Thr Ser Leu Pro Arg Asp
405 410 415

Lys Phe Leu Glu Ile Met Asn Thr Ile Phe Asn Lys Ala Ser Glu Pro
420 425 430

Glu Arg Glu Ala Ile Ile Phe Gln Tyr Thr Gly Trp Glu Ser Gly Asn
435 440 445

Asp Gly Tyr Gln Asn Gln His Gln Val Gly Arg Ala Val Gly Asp His
450 455 460

Phe Phe Ile Cys Pro Thr Asn Glu Phe Ala Leu Gly Leu Thr Glu Arg
465 470 475 480

Gly Ala Ser Val His Tyr Tyr Tyr Phe Thr His Arg Thr Ser Thr Ser
485 490 495

Leu Trp Gly Glu Trp Met Gly Val Leu His Gly Asp Glu Val Glu Tyr
500 505 510

Ile Phe Gly Gln Pro Met Asn Ala Ser Leu Gln Tyr Arg Gln Arg Glu
515 520 525

Arg Asp Leu Ser Arg Arg Met Val Leu Ser Val Ser Glu Phe Ala Arg
530 535 540

Thr Gly Asn Pro Ala Leu Glu Gly Glu His Trp Pro Leu Tyr Thr Arg
545 550 555 560

Glu Asn Pro Ile Tyr Phe Ile Phe Asn Ala Glu Gly Glu Asp Asp Leu
565 570 575

Arg Gly Glu Lys Tyr Gly Arg Gly Pro Met Ala Thr Ser Cys Ala Phe
580 585 590

Trp Asn Asp Phe Leu Pro Arg Leu Arg Ala Trp Ser Val Pro Leu Lys
595 600 605

Asp Pro Cys Lys Leu Asp Asp His Thr Ser Ile Ala Ser Thr Ala Arg
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cga cat ctg ata ctg tgc agt ttg ggg ctg tac tcc atc ctc gtg cag 96
 Arg His Leu Ile Leu Cys Ser Leu Gly Leu Tyr Ser Ile Leu Val Gln
 20 25 30

tcg gtc cat tgc cgg cat cat gac atc ggt agt tcg gtg gca cac cag 144
 Ser Val His Cys Arg His His Asp Ile Gly Ser Ser Val Ala His Gln
 35 40 45

cta gga tcg aaa tac tca caa tca tcc tcg tta tcg tca tcc tcg caa 192
 Leu Gly Ser Lys Tyr Ser Gln Ser Ser Ser Leu Ser Ser Ser Ser Gln
 50 55 60

tcg tca tcg tcg tta gct gaa gag gcc acg ctg aat aaa gat tca gat 240
 Ser Ser Ser Leu Ala Glu Glu Ala Thr Leu Asn Lys Asp Ser Asp
 65 70 75 80

gca ttt ttt aca cca tat ata ggt cac gga gat tct gtt cga att gta 288
 Ala Phe Phe Thr Pro Tyr Ile Gly His Gly Asp Ser Val Arg Ile Val
 85 90 95

gat gcc gaa tta ggt aca tta gag cgc gag cat atc cat agc act acg 336
 Asp Ala Glu Leu Gly Thr Leu Glu Arg Glu His Ile His Ser Thr Thr
 100 105 110

acc cgg cgg cgt ggc ctg acc cgg agg gag tcc agc tcc gat gcc acc 384
 Thr Arg Arg Arg Gly Leu Thr Arg Arg Glu Ser Ser Ser Asp Ala Thr

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120

125

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130						135				140						
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Thr	Thr	Leu	Glu	Ala	Pro	Ser	Gly	Lys	Lys	Val	Asp	Ala	Trp	Met	Gly	
145					150				155					160		
att	ccg	tac	gcf	cag	ccc	ccg	ctg	ggt	ccg	ctc	cgg	ttt	cga	cat	ccg	528
Ile	Pro	Tyr	Ala	Gln	Pro	Pro	Leu	Gly	Pro	Leu	Arg	Phe	Arg	His	Pro	
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cga	ccc	gcc	gaa	aga	tgg	acc	ggt	gtg	ctg	aac	gcf	acc	aaa	cca	ccc	576
Arg	Pro	Ala	Glu	Arg	Trp	Thr	Gly	Val	Leu	Asn	Ala	Thr	Lys	Pro	Pro	
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aac	tcc	tgc	gtc	cag	atc	gtg	gac	acc	gtg	tcc	ggt	gac	tcc	ccg	ggc	624
Asn	Ser	Cys	Val	Gln	Ile	Val	Asp	Thr	Val	Phe	Gly	Asp	Phe	Pro	Gly	
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gcg	acc	atg	tgg	aac	ccg	aac	aca	ccc	ctc	tcg	gag	gac	tgt	ctg	tac	672
Ala	Thr	Met	Trp	Asn	Pro	Asn	Thr	Pro	Leu	Ser	Glu	Asp	Cys	Leu	Tyr	
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Ile	Asn	Val	Val	Val	Pro	Arg	Pro	Arg	Pro	Lys	Asn	Ala	Ala	Val	Met	
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Leu	Trp	Ile	Phe	Gly	Gly	Ser	Phe	Tyr	Ser	Gly	Thr	Ala	Thr	Leu	Asp	
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gtg	tac	gat	cat	cgg	acg	ctg	gcc	tcg	gag	gag	aac	gtg	atc	gtg	gtt	816
Val	Tyr	Asp	His	Arg	Thr	Leu	Ala	Ser	Glu	Glu	Asn	Val	Ile	Val	Val	
					260			265			270					
tcg	ctg	cag	tac	cgt	gtc	gca	agt	ctt	ggt	ttt	ctc	tcc	ctg	ggc	act	864
Ser	Leu	Gln	Tyr	Arg	Val	Ala	Ser	Leu	Gly	Phe	Leu	Phe	Leu	Gly	Thr	
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ccg	gag	gca	cct	ggt	aac	gcf	ggg	ctg	ttt	gat	caa	aac	ctg	gca	ctg	912
Pro	Glu	Ala	Pro	Gly	Asn	Ala	Gly	Leu	Phe	Asp	Gln	Asn	Leu	Ala	Leu	
					290			295			300					
aga	tgg	gtc	cgc	gac	aac	atc	cac	cgg	tcc	ggc	ggt	gac	ccc	tcg	cgg	960
Arg	Trp	Val	Arg	Asp	Asn	Ile	His	Arg	Phe	Gly	Gly	Asp	Pro	Ser	Arg	
					305			310			315			320		
gtc	aca	ctg	tcc	ggc	gag	agc	gcc	gga	gcf	gtc	tcg	gtt	tcg	ctg	cac	1008
Val	Thr	Leu	Phe	Gly	Glu	Ser	Ala	Gly	Ala	Val	Ser	Val	Ser	Leu	His	
					325			330			335					
ctg	ctg	tcg	gcf	ctc	tcg	cgg	gac	ctg	tcc	cag	cgg	gcc	atc	ctc	cag	1056
Leu	Leu	Ser	Ala	Leu	Ser	Arg	Asp	Leu	Phe	Gln	Arg	Ala	Ile	Leu	Gln	
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agt	ggc	tcc	ccg	acg	gcc	cca	tgg	gcf	ctg	gtt	tcg	cgc	gaa	gaa	gct	1104
Ser	Gly	Ser	Pro	Thr	Ala	Pro	Trp	Ala	Leu	Val	Ser	Arg	Glu	Glu	Ala	
					355			360			365					
acg	ctt	aga	gct	ctt	cgt	ctg	gcc	gag	gcc	gtc	aac	tgt	ccg	cac	gat	1152

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Thr	Leu	Arg	Ala	Leu	Arg	Leu	Ala	Glu	Ala	Val	Asn	Cys	Pro	His	Asp	
370						375										380
gcg	acc	aag	ctg	agc	gat	gcc	gtc	gaa	tgt	ctg	cga	acc	aag	gat	ccg	1200
Ala	Thr	Lys	Leu	Ser	Asp	Ala	Val	Glu	Cys	Leu	Arg	Thr	Lys	Asp	Pro	
385						390										400
aac	gag	ctg	gtc	gac	aat	gag	tgg	ggc	acg	ctg	ggg	atc	tgc	gag	ttt	1248
Asn	Glu	Leu	Val	Asp	Asn	Glu	Trp	Gly	Thr	Leu	Gly	Ile	Cys	Glu	Phe	
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405																410
ccg	tcc	gtt	ccg	gtt	gtg	gac	ggt	gcc	tcc	ctc	gat	gag	aca	ccg	cag	1296
Pro	Phe	Val	Pro	Val	Val	Asp	Gly	Ala	Phe	Leu	Asp	Glu	Thr	Pro	Gln	
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																425
cgt	tcg	ttg	gcc	agc	ggt	cgc	tcc	aag	aaa	acg	gac	atc	ctg	acc	ggc	1344
Arg	Ser	Leu	Ala	Ser	Gly	Arg	Phe	Lys	Lys	Thr	Asp	Ile	Leu	Thr	Gly	
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																440
agc	aac	acc	gag	gag	ggt	tac	tac	ttt	atc	att	tac	tat	cta	acc	gaa	1392
Ser	Asn	Thr	Glu	Glu	Gly	Tyr	Tyr	Phe	Ile	Ile	Tyr	Tyr	Leu	Thr	Glu	
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																455
ctg	ctc	agg	aaa	gag	gaa	ggg	gtc	acg	gta	aca	cgc	gag	gag	ttc	cta	1440
Leu	Leu	Arg	Lys	Glu	Glu	Gly	Val	Thr	Val	Thr	Arg	Glu	Glu	Phe	Leu	
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																470
cag	gcc	gtc	cgg	gag	ttg	aat	ccg	tac	gtg	aac	ggt	gcc	gcc	cgg	cag	1488
Gln	Ala	Val	Arg	Glu	Leu	Asn	Pro	Tyr	Val	Asn	Gly	Ala	Ala	Arg	Gln	
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																490
gcc	atc	gtg	tcc	gag	tac	acg	gac	tgg	atc	gaa	ccg	gac	aac	ccg	aac	1536
Ala	Ile	Val	Phe	Glu	Tyr	Thr	Asp	Trp	Ile	Glu	Pro	Asp	Asn	Pro	Asn	
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																505
agc	aac	cgt	gac	gcg	ctc	gac	aag	atg	gtc	ggg	gat	tat	cac	ttc	acc	1584
Ser	Asn	Arg	Asp	Ala	Leu	Asp	Lys	Met	Val	Gly	Asp	Tyr	His	Phe	Thr	
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																520
tgc	aac	gtg	aac	gag	tcc	gcc	cag	cgg	tac	gcc	gag	gag	ggc	aac	aat	1632
Cys	Asn	Val	Asn	Glu	Phe	Ala	Gln	Arg	Tyr	Ala	Glu	Glu	Gly	Asn	Asn	
																530
																535
gtg	tcc	atg	tac	ctg	tac	acg	cac	aga	agc	aaa	gga	aat	ccc	tgg	ccg	1680
Val	Phe	Met	Tyr	Leu	Tyr	Thr	His	Arg	Ser	Lys	Gly	Asn	Pro	Trp	Pro	
																545
																550
agg	tgg	act	ggc	gtg	atg	cac	ggc	gac	gag	atc	aac	tac	gtg	ttt	ggc	1728
Arg	Trp	Thr	Gly	Val	Met	His	Gly	Asp	Glu	Ile	Asn	Tyr	Val	Phe	Gly	
																565
																570
gaa	ccg	ctg	aac	tcg	gcc	ctc	ggc	tac	cag	gac	gac	gag	aag	gac	ttt	1776
Glu	Pro	Leu	Asn	Ser	Ala	Leu	Gly	Tyr	Gln	Asp	Asp	Glu	Lys	Asp	Phe	
																580
																585
cca	aac	ccg	agt	acg	ccg	agc	gtg	gac	ctg	ccc	gaa	tgg	ccc	aag	cac	1824
Pro	Asn	Pro	Ser	Thr	Pro	Ser	Val	Asp	Leu	Pro	Glu	Trp	Pro	Lys	His	
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																600
cca	aac	ccg	agt	acg	ccg	agc	gtg	gac	ctg	ccc	gaa	tgg	ccc	aag	cac	1872
Pro	Asn	Pro	Ser	Thr	Pro	Ser	Val	Asp	Leu	Pro	Glu	Trp	Pro	Lys	His	
																610
																615
																620

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acc gcc cac gga cga cac tat ctg gag	ctg gga ctg aac acg acc ttc	1920
Thr Ala His Gly Arg His Tyr Leu Glu	Leu Gly Leu Asn Thr Thr Phe	
625 630	635 640	
gtg gga cgg ggc cca cga ttg cgg cag	tgc gct ttc tgg aag aaa tat	1968
Val Gly Arg Gly Pro Arg Leu Arg Gln	Cys Ala Phe Trp Lys Lys Tyr	
645	650 655	
ttg ccg caa cta gta gca gct acc tct	aac ctc caa gta act ccc gcg	2016
Leu Pro Gln Leu Val Ala Ala Thr Ser	Asn Leu Gln Val Thr Pro Ala	
660	665 670	
cct agc gta cct tgc gaa agc agc tca	aca tct tat cga tcc act cta	2064
Pro Ser Val Pro Cys Glu Ser Ser Thr	Ser Tyr Arg Ser Thr Leu	
675	680 685	
ctt cta ata gtc aca cta ctt tta gta	acg cgg ttc aag att taa	2109
Leu Leu Ile Val Thr Leu Leu Val Thr Arg	Phe Lys Ile	
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25

30

Ser Val His Cys Arg His His Asp Ile Gly Ser Ser Val Ala His Gln

35

40

45

Leu Gly Ser Lys Tyr Ser Gln Ser Ser Ser Leu Ser Ser Ser Gln

50

55

60

Ser Ser Ser Ser Leu Ala Glu Glu Ala Thr Leu Asn Lys Asp Ser Asp

65

70

75

80

Ala Phe Phe Thr Pro Tyr Ile Gly His Gly Asp Ser Val Arg Ile Val

85

90

95

Asp Ala Glu Leu Gly Thr Leu Glu Arg Glu His Ile His Ser Thr Thr

100

105

110

Thr Arg Arg Arg Gly Leu Thr Arg Arg Glu Ser Ser Ser Asp Ala Thr

115

120

125

Asp Ser Asp Pro Leu Val Ile Thr Thr Asp Lys Gly Lys Ile Arg Gly

130

135

140

Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val Asp Ala Trp Met Gly

145

150

155

160

Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg Phe Arg His Pro

165

170

175

Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn Ala Thr Lys Pro Pro

180

185

190

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Asn Ser Cys Val Gln Ile val Asp Thr Val Phe Gly Asp Phe Pro Gly
195 200 205

Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr
210 215 220

Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys Asn Ala Ala val Met
225 230 235 240

Leu Trp Ile Phe Gly Gly Ser Phe Tyr Ser Gly Thr Ala Thr Leu Asp
245 250 255

Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu Asn Val Ile Val Val
260 265 270

Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe Leu Phe Leu Gly Thr
275 280 285

Pro Glu Ala Pro Gly Asn Ala Gly Leu Phe Asp Gln Asn Leu Ala Leu
290 295 300

Arg Trp Val Arg Asp Asn Ile His Arg Phe Gly Gly Asp Pro Ser Arg
305 310 315 320

Val Thr Leu Phe Gly Glu Ser Ala Gly Ala Val Ser Val Ser Leu His
325 330 335

Leu Leu Ser Ala Leu Ser Arg Asp Leu Phe Gln Arg Ala Ile Leu Gln
340 345 350

Ser Gly Ser Pro Thr Ala Pro Trp Ala Leu Val Ser Arg Glu Glu Ala
355 360 365

Thr Leu Arg Ala Leu Arg Leu Ala Glu Ala Val Asn Cys Pro His Asp
370 375 380

Ala Thr Lys Leu Ser Asp Ala Val Glu Cys Leu Arg Thr Lys Asp Pro
385 390 395 400

Asn Glu Leu Val Asp Asn Glu Trp Gly Thr Leu Gly Ile Cys Glu Phe
405 410 415

Pro Phe Val Pro Val Val Asp Gly Ala Phe Leu Asp Glu Thr Pro Gln
420 425 430

Arg Ser Leu Ala Ser Gly Arg Phe Lys Lys Thr Asp Ile Leu Thr Gly
435 440 445

Ser Asn Thr Glu Glu Gly Tyr Tyr Phe Ile Ile Tyr Tyr Leu Thr Glu
450 455 460

Leu Leu Arg Lys Glu Glu Gly Val Thr Val Thr Arg Glu Glu Phe Leu
465 470 475 480

Gln Ala Val Arg Glu Leu Asn Pro Tyr Val Asn Gly Ala Ala Arg Gln
485 490 495

Ala Ile Val Phe Glu Tyr Thr Asp Trp Ile Glu Pro Asp Asn Pro Asn
500 505 510

Ser Asn Arg Asp Ala Leu Asp Lys Met Val Gly Asp Tyr His Phe Thr
515 520 525

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Cys	Asn	Val	Asn	Glu	Phe	Ala	Gln	Arg	Tyr	Ala	Glu	Glu	Gly	Asn	Asn
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Val	Phe	Met	Tyr	Leu	Tyr	Thr	His	Arg	Ser	Lys	Gly	Asn	Pro	Trp	Pro
545				550					555				560		
Arg	Trp	Thr	Gly	Val	Met	His	Gly	Asp	Glu	Ile	Asn	Tyr	Val	Phe	Gly
				565				570				575			
Glu	Pro	Leu	Asn	Ser	Ala	Leu	Gly	Tyr	Gln	Asp	Asp	Glu	Lys	Asp	Phe
					580		585			590					
Ser	Arg	Lys	Ile	Met	Arg	Tyr	Trp	Ser	Asn	Phe	Ala	Lys	Thr	Gly	Asn
		595				600				605					
- Pro	Asn	Pro	Ser	Thr	Pro	Ser	Val	Asp	Leu	Pro	Glu	Trp	Pro	Lys	His
					610		615			620					
- Thr	Ala	His	Gly	Arg	His	Tyr	Leu	Glu	Leu	Gly	Leu	Asn	Thr	Thr	Phe
					625		630		635				640		
Val	Gly	Arg	Gly	Pro	Arg	Leu	Arg	Gln	Cys	Ala	Phe	Trp	Lys	Lys	Tyr
				645				650			655				
Leu	Pro	Gln	Leu	Val	Ala	Ala	Thr	Ser	Asn	Leu	Gln	Val	Thr	Pro	Ala
				660			665			670					
Pro	Ser	Val	Pro	Cys	Glu	Ser	Ser	Ser	Thr	Ser	Tyr	Arg	Ser	Thr	Leu
				675		680			685						
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 Lys Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly
 20 25 30

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ctg aac gcg acc aaa ccg ccc aac tcc tgc gtc cag atc gtg gac acc Leu Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr 50 55 60	191
gtg ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccg Val Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro 65 70 75	239
ctc tcg gag gac tgt ctg tac atc aac gtg gtc gtg cca cgg ccc agg Leu Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg 80 85 90 95	287
ccc aag aat gcc gcc gtc atg ctg tgg atc ttc ggg ggt ggc ttc tac Pro Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Gly Phe Tyr 100 105 110	335
tcc ggg act gcc acg ctg gac gtg tac gac cac cgg acg ctg gcc tcg Ser Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser 115 120 125	383
gag gag aac gtg atc gta gtt tcg ctg cag tac cgt gtc gca agt ctt Glu Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu 130 135 140	431
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ctc cgg ttt cga cat ccg cga ccc gcc gaa aga tgg acc ggt gtg ctg Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu 35 40 45	143
aac gcg acc aaa ccg ccc aac tcc tgc gtc cag atc gtg gac acc gtc Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val 50 55 60	191
ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccg ctc Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu 65 70 75	239

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ggg act gcc acg ctg gac gtg tac gac cac cgg acg ctg gcc tcg gag Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu 115 120 125	383
gag aac gtg atc gta gtt tcg ctg cag tac cgt gtc gca agt ctt ggg Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly 130 135 140	431
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ctc cgg ttt cga cat ccg cga ccc gcc gaa aga tgg acc ggt gtg ctg Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu 35 40 45	143
aac gcg acc aaa cca ccc aac tcc tgc gtc cag atc gtg gac acc gtg Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val 50 55 60	191
tcc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccc ctc Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu 65 70 75	239
tcg gag gac tgt ctg tac atc aac gtg gtc gtg cca agg ccg agg ccc Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro 80 85 90 95	287
aag aat gcc gct gtc atg ctg tgg atc ttt ggg ggt agc ttc tac tcc Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Ser Phe Tyr Ser 100 105 110	335
ggg act gcc acg ttg gac gtg tac gat cat cgg acg ctg gcc tcg gag Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu 115 120 125	383
gag aac gtg atc gtg gtt tcg ctg cag tac cgt gtc gca agt ctt ggt	431

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Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly	
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Phe Leu Phe Leu Gly Thr Pro Glu Ala	
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aag gtg gac gca tgg atg ggc att ccg tac gcg cag ccc ccg ctg ggt	96
Lys Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly	
20 25 30	
ccg ctc cgg ttt cga cat ccg cga ccc gcc gaa aga tgg acc ggt gtg	144
Pro Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val	
35 40 45	
ctg aac gcg acc aaa cca ccc aac tcc tgc gtc cag atc gtg gac acc	192
Leu Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr	
50 55 60	
gtg ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccc	240
Val Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro	
65 70 75 80	
ctc tcg gag gac tgt ctg tac atc aac gtg gtc gtg cca agg ccg agg	288
Leu Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg	
85 90 95	
ccc aag aat gcc gct gtc atg ctg tgg atc ttt ggg ggt agc ttc tac	336
Pro Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Ser Phe Tyr	
100 105 110	
tcc ggg act gcc acg ttg gac gtg tac gat cat cgg acg ctg gcc tcg	384
Ser Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser	
115 120 125	
gag gag aac gtg atc gtg gtt tcg ctg cag tac cgt gtc gca agt ctt	432
Glu Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu	
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<220>

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Lys Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly
20 25 30

ccg ctc cg^t ttt cga cat ccg cga ccc gcc gaa aga tgg acc ggt gtg 144
Pro Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val
35 40 45

ctg aac gcg acc aaa cca ccc aac tcc tgc gtc cag atc gtg gac acc 192
Leu Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr
50 55 60

gtg ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccc 240
Val Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro
65 70 75 80

ctc tcg gag gac tgt ctg tac atc aac gtg gtc gtg cca agg ccg agg 288
Leu Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg
85 90 95

ccc aag aat gcc gct gtc atg ctg tgg atc ttt ggg ggt agc ttc tac 336
Pro Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Ser Phe Tyr
100 105 110

tcc ggg act gcc acg ttg gac gtg tac gat cat cgg acg ctg gcc tcg 384
Ser Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser
115 120 125

gag gag aac gtg atc gtg gtt tcg ctg cag tac cgt gtc gca agt ctt 432
Glu Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu
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Gly Phe Leu Phe Leu Gly Thr Pro Glu Ala
145 150

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<220>
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gtg gac gca tgg atg ggc att ccg tac gcg cag ccc ccg ctg ggt ccg 95
Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro
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50 55 60	
ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccc ctc Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu	239
65 70 75	
tcg gag gac tgt ctg tac atc aac gtg gtc gtg cca agg ccg agg ccc Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro	287
80 85 90 95	
aag aat gcc gct gtc atg ctg tgg atc ttt ggg ggt ggc ttc tac tcc Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser	335
100 105 110	
ggg act gcc acg ttg gac gtg tac gat cat ccg acg ctg gcc tcg gag Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu	383
115 120 125	
gag aac gtg atc gtg gtt tcg ctg cag tac cgt gtc gca agt ctt ggt Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly	431
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35 40 45	
gcg acc aaa ccg ccc aac tcc tgc gtc cag atc gtg gac acc gtc ttc Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe	192
50 55 60	
ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccg ctc tcg Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser	240
65 70 75 80	
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act gcc acg ctg gac gtg tac gac cac cg ^g acg ctg gcc tcg gag gag Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu 115 120 125			384
aac gtg atc gta gtt tcg ctg cag tac cgt gtc gca agt ctt ggt ttt Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe 130 135 140			432
ctc ttc ctg ggc aca ccg gag gca c Leu Phe Leu Gly Thr Pro Glu Ala 145 150			457
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gac gca tgg atg ggc att ccg tac gcg cag cct ccg ctg ggt ccg ctc Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu 20 25 30			96
cgg ttt cga cat ccg cga ccc gcc gaa aga tgg acc ggt gtg ctg aac Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn 35 40 45			144
gcg acc aaa ccg ccc aac tcc tgc gtc cag atc gtg gac acc gtg ttc Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe 50 55 60			192
ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccg ctc tcg Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser 65 70 75 80			240
gag gac tgt ctg tac atc aac gtg gtc gtg cca ccg ccc agg ccc aag Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys 85 90 95			288
aat gcc gcc gtc atg ctg tgg atc ttc ggg ggt agc ttc tac tcc ggg Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Ser Phe Tyr Ser Gly 100 105 110			336
act gcc acg ctg gac gtg tac gac cac cg ^g acg ctg gcc tcg gag gag Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu 115 120 125			384
aac gtg atc gta gtt tcg ctg cag tac cgt gtc gca agt ctt ggt ttt Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe 130 135 140			432

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Leu Phe Leu Gly
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Asp	Ala	Trp	Met	Gly	Ile	Pro	Tyr	Ala	Gln	Pro	Pro	Leu	Gly	Pro	Leu	
			20					25					30			

cggttccatccggaaagttggaccggtgtctgaac 144
 Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn
 35 40 45

gcg acc aaa ccg ccc aac tcc tgc gtc cag atc gtg gac acc gtg ttc	192
Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe	
50 55 60	

ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccg ctc tcg 240
 Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser
 65 70 75 80

gag gac tgt ctg tac atc aac gtg gtc gtg cca cg_g ccc agg ccc aag 288
 Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Arg Pro Lys
 85 90 95

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aat gcc gcc gtc atg ctg tgg atc ttc ggg ggt agc ttc tac tcc ggg 336
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 115 120 125

aac gtg atc gta gtt tcg ctg cag tac cgt gtc gca agt ctt ggt ttt 432
Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe
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145 150

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<220>
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gac gca tgg atg ggc att ccg tac gcg cag cct ccg ctg ggt ccg ctc 96
 Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu
 20 25 30

cgg ttt cga cat ccg cga ccc gcc gaa aga tgg acc ggt gtg ctg aac 144
 Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn
 35 40 45

gcg acc aaa ccg ccc aac tcc tgc gtc cag atc gtg gac acc gtg ttc 192
 Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe
 50 55 60

ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccg ctc tcg 240
 Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser
 65 70 75 80

gag gac tgt ctg tac atc aac gtg gtc gtg cca cg^g ccc agg ccc aag 288
 Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys
 85 90 95

aat gcc gcc gtc atg ctg tgg atc ttc ggg ggt agc ttc tac tcc ggg 336
 Asn Ala Ala Val Met Leu Trp Ile Phe Gly Ser Phe Tyr Ser Gly
 100 105 110

act gcc acg ctg gac gtg tac gac cac cg^g acg ctg gcc tcg gag gag 384
 Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu
 115 120 125

aac gtg atc gta gtt tcg ctg cag tac cgt gtc gca agt ctt ggt ttt 432
 Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe
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<210> 71
<211> 447
<212> DNA
<213> Culex pipiens pipiens strain Barriol (R)

<220>
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<222> (3)..(446)

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 Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro
 20 25 30

ctc cgg ttt cga cat ccg cga ccc gcc gaa aga tgg acc ggt gtg ctg 143
 Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu
 35 40 45

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50 55 60	
ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccc ctc Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu	239
65 70 75	
tcg gag gac tgt ctg tac atc aac gtg gtc gtg cca agg ccg agg ccc Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Pro Arg Pro Arg Pro	287
80 85 90 95	
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100 105 110	
ggg act gcc acg ttg gac gtg tac gat cat cgg acg ctg gcc tcg gag Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu	383
115 120 125	
gag aac gtg atc gtg gtt tcg ctg cag tac cgt gtc gca agt ctt ggt Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly	431
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<211> 447
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35 40 45	
aac gcg acc aaa cca ccc aac tcc tgc gtc cag atc gtg gac acc gtg Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val	191
50 55 60	
ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccc ctc Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu	239
65 70 75	
tcg gag gac tgt ctg tac atc aac gtg gtc gtg cca agg ccg agg ccc Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro	287
80 85 90 95	

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100	105	110
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Gly Thr Ala Thr Leu Asp Val Tyr Asp	His Arg Thr Leu Ala Ser Glu	
115	120	125
gag aac gtg atc gtg gtt tcg ctg cag tac cgt gtc gca agt ctt ggt	431	
Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly		
130	135	140
ttt ctc ttc ctg ggc a		447
Phe Leu Phe Leu Gly		
145		
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<213> Culex pipiens pipiens strain Bruges B (S)		
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Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro		
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Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu		
35 40 45		
aac gcg acc aaa cca ccc aac tcc tgc gtc cag atc gtg gac acc gtg	191	
Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val		
50 55 60		
ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccc ctc	239	
Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu		
65 70 75		
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Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro		
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Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser		
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Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu		
115 120 125		
gag aac gtg atc gtg gtt tcg ctg cag tac cgt gtc gca agt ctt ggt	431	
Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly		
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ttt ctc ttc ctg ggc ac	448	

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Phe Leu Phe Leu Gly
145

<210> 74
<211> 447

<212> DNA

<213> Culex pipiens pipiens strain Heteren (S)

<220>
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<400> 74

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Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro	
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ctc cgg ttt cga cat cca cga ccc gcc gaa aga tgg acc ggt gtg ctg	143
Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu	
35 40 45	

aac gcg acc aaa cca ccc aac tcc tgc gtc cag atc gtg gac aca gtg	191
Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val	
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ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccc ctc	239
Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu	
65 70 75	

tcg gag gac tgt ctg tac atc aac gtg gtc gtg cca agg ccg agg ccc	287
Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro	
80 85 90 95	

aag aat gcc gct gtc atg ctg tgg atc ttt ggg ggt ggc ttc tac tcc	335
Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser	
100 105 110	

ggg act gcc acg ttg gac gtg tac gac cat cgg acg ctg gcc tcg gaa	383
Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu	
115 120 125	

gag aac gtg atc gtg gtt tcg ctg cag tac cgt gtc gca agt ctt ggt	431
Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly	
130 135 140	

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Phe Leu Phe Leu Gly	
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<210> 75

<211> 450

<212> DNA

<213> Culex pipiens quinquefasciatus strain Ling (S)

<220>

<221> CDS

<222> (1)..(447)

<400> 75

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gtg gac gcc tgg atg ggc att ccg tac gcg cag ccc ccg ctg ggt ccg Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro 20 25 30	96
ctc cgg ttt cga cat ccg cga ccc gcc gaa aga tgg acc ggt gtg ctg Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu 35 40 45	144
aac gcg acc aaa ccg ccc aac tcc tgc gtc cag atc gtg gac acc gtg Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val 50 55 60	192
ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccg ctc Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu 65 70 75 80	240
tcg gag gac tgt ctg tac atc aac gtg gtc gtg cca cgg ccc agg ccc Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro 85 90 95	288
aag aat gcc gcc gtc atg ctg tgg atc ttc ggg ggt ggc ttc tac tcc Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser 100 105 110	336
ggg act gcc acg ctg gac gtg tat gac cac cgg acg ctg gcc tcg gag Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu 115 120 125	384
gag aac gtg atc gta gtt tcg ctg cag tac cgt gtc gca agt ctt ggt Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly 130 135 140	432
ttt ctc ttc ctg ggc aca Phe Leu Phe Leu Gly 145	450
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<400> 76	
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gtg gac gca tgg atg ggc att ccg tac gcg cag ccc ccg ctg ggt ccg Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro 20 25 30	95
ctc cgg ttt cga cat ccg cga ccc gcc gaa aga tgg acc ggt gtg ctg Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu 35 40 45	143
aac gcg acc aaa ccg ccc aac tcc tgc gtc cag atc gtg gac acc gtg	191

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Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val	
50 55 60	
tgc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccg ctc	239
Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu	
65 70 75	
tcg gag gac tgt ctg tac atc aac gtg gtc gtg cca ccg ccc agg ccc	287
Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro	
80 85 90 95	
aag aat gcc gcc gtc atg ctg tgg atc ttc ggg ggt ggc ttc tac tcc	335
Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser	
100 105 110	
ggg act gcc acg ctg gac gtg tac gac cac ccg acg ctg gcc tcg gag	383
Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu	
115 120 125	
gag aac gtg atc gta gtt tcg ctg cag tac cgt gtc gca agt ctt ggt	431
Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly	
130 135 140	
ttt ctc ttc ctg ggc ac	448
Phe Leu Phe Leu Gly	
145	
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<400> 77	
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Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val Asp	
1 5 10 15	
gca tgg atg ggc att ccg tac gcg cag cct ccg ctg ggt ccg ctc cg	96
Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg	
20 25 30	
ttt cga cat ccg cga ccc gcc gaa aga tgg acc ggt gtg ctg aac gcg	144
Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn Ala	
35 40 45	
acc aaa cca ccc aac tcc tgc gtc cag atc gtg gac acc gtg ttc ggt	192
Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe Gly	
50 55 60	
gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccg ctc tcg gag	240
Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser Glu	
65 70 75 80	
gac tgt ctg tac atc aac gtg gtc gtg cca ccg ccc agg ccc aag aat	288
Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys Asn	
85 90 95	
gcc gcc gtc atg ctg tgg atc ttc ggg ggt ggc ttc tac tcc ggg act	336
Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser Gly Thr	

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100	105	110	
gcc acg ctg gac gtg tac gac cac	cgg acg ctg acc tcg gag gag aac		384
Ala Thr Leu Asp Val Tyr Asp His Arg	Thr Leu Thr Ser Glu Glu Asn		
115 120	125		
gtg atc gta gtt tcg ctg cag tac cgt gtc gca agt ctt ggt ttt ctc t	433		
Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe Leu			
130 135	140		
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<213> Culex torrentium strain Uppsala			
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Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys			
1 5	10	15	
gtg gac gca tgg atg ggc att ccg tac gcg cag cct ccg ctg ggt ccg			95
Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro			
20	25	30	
ctt ccg ttt cga cat cca cga ccc gcc gaa aga tgg acc ggt gtg ctg			143
Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu			
35 40	45		
aac gcg acc aaa cca ccc aac tcc tgc gtc cag atc gtc gac acc gtg			191
Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val			
50 55	60		
ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccc ctc			239
Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu			
65 70	75		
tcg gaa gac tgt ctg tac atc aac gtt gtg gtg cca ccg ccg agg ccc			287
Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro			
80 85	90	95	
aag aat gcc gcc gtc atg ctg tgg atc ttc ggg ggt gga ttc tac tcc			335
Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser			
100	105	110	
ggg acc gcc acg ctg gac gtg tac gac cac ccg acg ctg gcc tcg gag			383
Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu			
115 120	125		
gag aac gtg atc gtg gtt tcg ctg cag tac cgt gtc gca agt ctt ggt			431
Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly			
130 135	140		
ttt ctc ttc ctg ggc ac			448
Phe Leu Phe Leu Gly			
145			
<210> 79			
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<213> *Culex pipiens quinquefasciatus* strain Trans (S)

<220>

<221> CDS

<222> (3)..(446)

<400> 79
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 Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys
 1 5 10 15

gtg gac gca tgg atg ggc att ccg tac gcg cag cct ccg ctg ggt ccg 95
 Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro
 20 25 30

ctc cgg ttt cga cat ccg cga ccc gcc gaa aga tgg acc ggt gtg ctg 143
 Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu
 35 40 45

aac gcg acc aaa cca ccc aac tcc tgc gtc cag atc gtg gac acc gtg 191
 Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val
 50 55 60

ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccg ctc 239
 Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu
 65 70 75

tcg gag gac tgt ctg tac atc aac gtg gtc gtg cca cgg ccc agg ccc 287
 Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro
 80 85 90 95

aag aat gcc gcc gtc atg ctg tgg atc ttc ggg ggt ggc ttc tac tcc 335
 Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser
 100 105 110

ggg act gcc acg ctg gac gtg tac gac cac cgg acg ctg acc tcg gag 383
 Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Thr Ser Glu
 115 120 125

gag aac gtg atc gta gtt tcg ctg cag tac cgt gtc gca agt ctt ggt 431
 Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly
 130 135 140

ttt ctc ttc ctg ggc ac 448
 Phe Leu Phe Leu Gly
 145

<210> 80
<211> 412
<212> DNA
<213> *Culex pipiens quinquefasciatus* strain BED (S)

<220>

<221> CDS

<222> (1)..(411)

<400> 80
 aca ctg gaa gcg cct agt gga aag aag gtg gac gca tgg atg ggc att 48
 Thr Leu Glu Ala Pro Ser Gly Lys Lys Val Asp Ala Trp Met Gly Ile
 1 5 10 15

ccg tac gcg cag cct ccg ctg ggt ccg ctc cgg ttt cga cat ccg cga 96
 Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg

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20 25 30

ccc gcc gaa aga tgg acc ggt gtg ctg aac gcg acc aaa cca ccc aac 144
 Pro Ala Glu Arg Trp Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn
 35 40 45

tcc	tgc	gtc	cag	atc	gtg	gac	acc	gtg	ttc	ggt	gac	ttc	ccg	ggg	gcc	192
Ser	Cys	Val	Gln	Ile	Val	Asp	Thr	Val	Phe	Gly	Asp	Phe	Pro	Gly	Ala	
50				55					60							

acc atg tgg aac ccg aac aca ccg ctc tcg gag gac tgt ctg tac atc 240
 Thr Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile
 65 70 75 80

aac gtg gtc gtg cca cg⁸⁵ ccc agg ccc aag aat gcc g⁹⁰ cc gtc atg ctg 288
 Asn Val Val Val Pro Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu
85 90 95

tgg atc ttc ggg ggt ggc ttc tac tcc ggg act gcc acg ctg gac gtg 336
Trp Ile Phe Gly Gly Gly Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val
100 105 110

tac	gac	cac	cg ^g	acg	ctg	gcc	tcg	gag	gag	aac	gtg	atc	gta	gtt	tcg	384
Tyr	Asp	His	Arg	Thr	Leu	Ala	Ser	Glu	Glu	Asn	Val	Ile	Val	Val	Ser	
			115				120						125			

ctg cag tac cgt gtc gca agt ctt ggt t 412
Leu Gln Tyr Arg Val Ala Ser Leu Gly
130 135

<210> 81
<211> 437
<212> DNA
<213> *Culex pipiens quinquefasciatus* strain BSQ (S)

<220>
<221> CDS
<222> (3)..(434)

<400> 81
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Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys
1 5 10 15

gtg gac gcc tgg atg ggc att ccg tac gcg cag ccc ccg ctg ggt ccg 95
 Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro
 20 25 30

ctc cggtttcgatccgcggccgaaagatggaccggatgtgctg 143
 Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu
 35 40 45

aac gcg acc aaa ccg ccc aac tcc tgc gtc cag atc gtg gac acc gtg 191
 Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val
 50 55 60

ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccg ctc 239
 Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu
 65 70 75

tcg gag gac tgt ctg tac atc aac gtg gtc gtg cca cg_g ccc agg ccc 287
 Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro
 80 85 90 95

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aag aat gcc gcc gtc atg ctg tgg atc ttc ggg ggt ggc ttc tac tcc Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Gly Phe Tyr Ser 100 105 110	335
ggg act gcc acg ctg gac gtg tac gac cac cgg acg ctg gcc tcg gag Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu 115 120 125	383
gag aac gtg atc gta gtt tcg ctg cag tac cgt gtc gca agt ctt ggg Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly 130 135 140	431
 ttt ctc Phe	437
<210> 82	
<211> 414	
<212> DNA	
<213> Culex pipiens quinquefasciatus strain Brazza (S)	
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<222> (2)..(412)	
<400> 82	
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tac gcg cag ccc ccg ctg ggt ccg ctc cg 97 Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg Pro 20 25 30	
gcc gaa aga tgg acc ggt gtg ctg aac gcg acc aaa ccg ccc aac tcc 145 Ala Glu Arg Trp Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn Ser 35 40 45	
tgc gtc cag atc gtg gac acc gtg ttc ggt gac ttc ccg ggg gcc acc 193 Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala Thr 50 55 60	
atg tgg aac ccg aac aca ccg ctc tcg gag gac tgt ctg tac atc aac 241 Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile Asn 65 70 75 80	
gtg gtc gtg cca ccg ccc agg ccc aag aat gcc gcc gtc atg ctg tgg 289 Val Val Val Pro Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu Trp 85 90 95	
atc ttc ggg ggt ggc ttc tac tcc ggg act gcc acg ctg gac gtg tac 337 Ile Phe Gly Gly Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val Tyr 100 105 110	
gac cac ccg acg ctg gcc tcg gag gag aac gtg atc gta gtt tcg ctg 385 Asp His Arg Thr Leu Ala Ser Glu Glu Asn Val Ile Val Val Ser Leu 115 120 125	
cag tac cgt gtc gca agt ctt ggg ttt ct Gln Tyr Arg Val Ala Ser Leu Gly Phe 130 135	414

<210> 83

s644LISTGB80

<211> 437

<212> DNA

<213> Culex pipiens quinquefasciatus strain Bouake (R)

<220>

<221> CDS

<222> (3)..(434)

<400> 83

ag ggc aaa atc cgt gga acg aca ctg gaa gcg cct agt gga aag aag	47
Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys	
1 5 10 15	

gtg gac gca tgg atg ggc att ccg tac gcg cag ccc ccg ctg ggt ccg	95
Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro	
20 25 30	

ctc cgg ttt cga cat ccg cga ccc gcc gaa aga tgg acc ggt gtg ctg	143
Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu	
35 40 45	

aac gcg acc aaa ccg ccc aac tcc tgc gtc cag atc gtg gac acc gtg	191
Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val	
50 55 60	

ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg aac aca ccg ctc	239
Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu	
65 70 75	

tcg gag gac tgt ctg tac atc aac gtg gtc gtg cca cgg ccc agg ccc	287
Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro	
80 85 90 95	

aag aat gcc gcc gtc atg ctg tgg atc ttc ggg ggt ggc ttc tac tcc	335
Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser	
100 105 110	

ggg act gcc acg ctg gac gtg tac gac cac cgg acg ctg gcc tcg gag	383
Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu	
115 120 125	

gag aac gtg atc gta gtt tcg ctg cag tac cgt gtc gca agt ctt ggt	431
Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly	
130 135 140	

ttt ctc Phe	437
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<210> 84

<211> 416

<212> DNA

<213> Culex pipiens quinquefasciatus strain Thai (S)

<220>

<221> CDS

<222> (1)..(414)

<400> 84

aca ctg gaa gcg cct agt gga aag aag gtg gac gcc tgg atg ggc att	48
Thr Leu Glu Ala Pro Ser Gly Lys Lys Val Asp Ala Trp Met Gly Ile	
1 5 10 15	

ccg tac gcg cag ccc ccg ctg ggt ccg ctc cgg ttt cga cat ccg cga	96
Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg	

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20	25	30	
ccc gcc gaa aga tgg acc ggt gtg ctg aac gcg acc aaa ccg ccc aac Pro Ala Glu Arg Trp Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn	35 40 45		144
tcc tgc gtc cag atc gtc gac acc gtc ttc ggt gac ttc ccg ggg gcc Ser Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala	50 55 60		192
acc atg tgg aac ccg aac aca ccg ctc tcg gag gac tgt ctg tac atc Thr Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile	65 70 75 80		240
aac gtt gtc gtt cca cgg ccc agg ccc aag aat gcc gcc gtc atg ctg Asn Val Val Val Pro Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu	85 90 95		288
tgg atc ttc ggg ggt ggc ttc tac tcc ggg act gcc acg ctg gac gtt Trp Ile Phe Gly Gly Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val	100 105 110		336
tac gac cac cgg acg ctg gcc tcg gag gag aac gtt atc gta gtt tcg Tyr Asp His Arg Thr Leu Ala Ser Glu Glu Asn Val Ile Val Val Ser	115 120 125		384
ctg cag tac cgt gtc gca agt ctt ggg ttt ct Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe	130 135		416
<210> 85 <211> 426 <212> DNA <213> Culex pipiens quinquefasciatus strain Madurai (S)			
<220> <221> CDS <222> (3)..(425)			
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ccg tac gcg cag ccc ccg ctg ggt ccg ctc cgg ttt cga cat ccg cga Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg	20 25 30		95
ccc gcc gaa aga tgg acc ggt gtc ctg aac gca acc aaa ccg ccc aac Pro Ala Glu Arg Trp Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn	35 40 45		143
tcc tgc gtc cag atc gtc gac acc gtc ttc ggt gac ttc ccg ggg gcc Ser Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala	50 55 60		191
acc atg tgg aac ccg aac aca ccg ctc tcg gag gac tgt ctg tac atc Thr Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile	65 70 75		239
aac gtt gtc gtt cca cgg ccc agg ccc aag aat gcc gcc gtc atg ctg Asn Val Val Val Pro Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu	80 85 90 95		287

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tgg atc ttc ggg ggt ggc ttc tac tcc	ggg act gcc acg ctg gac gtg	335
Trp Ile Phe Gly Gly Phe Tyr Ser	Gly Thr Ala Thr Leu Asp Val	
100	105	110

tac gac cac cgg acg ctg gcc tcg	gag gag aac gtg atc gta gtt tcg	383
Tyr Asp His Arg Thr Leu Ala Ser	Glu Glu Asn Val Ile Val Val Ser	
115	120	125

ctg cag tac cgt gtc gca agt ctt	ggg ttt ctc ttc ctg ggc a	426
Leu Gln Tyr Arg Val Ala Ser	Leu Gly Phe Leu Phe Leu Gly	
130	135	140

<210> 86

<211> 423

<212> DNA

<213> Culex pipiens quinquefasciatus strain Recife (R)

<220>

<221> CDS

<222> (1)..(423)

<400> 86

ctg gaa gcg cct agc gga aag aag	gtg gac gca tgg atg ggc att ccg	48
Leu Glu Ala Pro Ser Gly Lys Lys Val	Asp Ala Trp Met Gly Ile Pro	
1	5	10

tac gcg cag cct ccg ctg ggt ccg	ctc cggtt cga cat ccg cga ccc	96
Tyr Ala Gln Pro Pro Leu Gly Pro	Leu Arg Phe Arg His Pro Arg Pro	
20	25	30

gcc gaa aga tgg acc ggt gtg ctg	aac gcg acc aaa ccg ccc aac tcc	144
Ala Glu Arg Trp Thr Gly Val	Leu Asn Ala Thr Lys Pro Pro Asn Ser	
35	40	45

tgc gtc cag atc gtg gac acc	gtg ttc ggt gac ttc ccg ggg gcc acc	192
Cys Val Gln Ile Val Asp Thr Val	Phe Gly Asp Phe Pro Gly Ala Thr	
50	55	60

atg tgg aac ccg aac aca ccg	ctc tcg gag gac tgt ctg tac atc aac	240
Met Trp Asn Pro Asn Thr Pro	Leu Ser Glu Asp Cys Leu Tyr Ile Asn	
65	70	75

gtg gtc gtg cca cgg ccc agg	ccc aag aat gcc gcc gtc atg ctg tgg	288
Val Val Val Pro Arg Pro Arg	Lys Asn Ala Ala Val Met Leu Trp	
85	90	95

atc ttc ggg ggt agc ttc tac tcc	ggg act gcc acg ctg gac gtg tac	336
Ile Phe Gly Gly Ser Phe Tyr Ser	Gly Thr Ala Thr Leu Asp Val Tyr	
100	105	110

gac cac cgg acg ctg gcc tcg	gag gag aac gtg atc gta gtt tcg ctg	384
Asp His Arg Thr Leu Ala Ser	Glu Glu Asn Val Ile Val Val Ser Leu	
115	120	125

cag tac cgt gtc gca agt ctt	ggt ttt ctc ttc ctg ggc	423
Gln Tyr Arg Val Ala Ser	Leu Gly Phe Leu Phe Leu Gly	
130	135	140

<210> 87

<211> 416

<212> DNA

s644LISTGB80

<213> Culex pipiens quinquefasciatus strain Brésil (S)

<220>

<221> CDS

<222> (3)..(413)

<400>.87

ca ctg gaa gcg cct agt gga aag aag gtg gac gca tgg atg ggc att	47
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1 5 10 15	

ccg tac gcg cag ccc ccg ctg ggt ccg ctc cggttt cga cat ccg cga	95
Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg	
20 25 30	

ccc gcc gaa aga tgg acc ggt gtg ctg aac gcg acc aaa ccg ccc aac	143
Pro Ala Glu Arg Trp Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn	
35 40 45	

tcc tgc gtc cag atc gtg gac acc gtg ttcc ggt gac ttcc ccg ggg gcc	191
Ser Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala	
50 55 60	

acc atg tgg aac ccg aac aca ccg ctc tcg gag gac tgt ctg tac atc	239
Thr Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile	
65 70 75	

aac gtg gtc gtg cca ccg ccc agg ccc aag aat gcc gcc gtc atg ctg	287
Asn Val Val Val Pro Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu	
80 85 90 95	

tgg atc ttc ggg ggt ggc ttcc tat tcc ggg act gcc acg ctg gac gtg	335
Trp Ile Phe Gly Gly Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val	
100 105 110	

tac gac cac ccg acg ctg gcc tcg gag gag aac gtg atc gta gtt tcg	383
Tyr Asp His Arg Thr Leu Ala Ser Glu Glu Asn Val Ile Val Val Ser	
115 120 125	

ctg cag tac cgt gtc gca agt ctt ggg ttt ctc	416
Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe	
130 135	

<210> 88

<211> 418

<212> DNA

<213> Culex pipiens quinquefasciatus strain Moorea (S)

<220>

<221> CDS

<222> (1)..(417)

<400> 88

aca ctg gaa gcg cct agt gga aag aag gtg gac gca tgg atg ggc att	48
Thr Leu Glu Ala Pro Ser Gly Lys Lys Val Asp Ala Trp Met Gly Ile	
1 5 10 15	

ccg tac gcg cag cct ccg ctg ggt ccg ctc cggttt cga cat ccg cga	96
Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg	
20 25 30	

ccc gcc gaa aga tgg acc ggt gtg ctg aac gcg acc aaa ccg ccc aac	144
Pro Ala Glu Arg Trp Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn	

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35

40

45

tcc tgc gtc cag atc gtg gac acc gtg ttc ggt gac ttc ccg ggg gcc 192
 Ser Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala
 50 55 60

acc atg tgg aac ccg aac aca ccg ctc tcg gag gac tgt ctg tac atc 240
 Thr Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile
 65 70 75 80

aac gtg gtc gtg cca ccg ccc agg ccc aag aat gcc gcc gtc atg ctg 288
 Asn Val Val Val Pro Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu
 85 90 95

tgg atc ttc ggg ggt ggc ttc tac tcc ggg act gcc acg ctg gac gtg 336
 Trp Ile Phe Gly Gly Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val
 100 105 110

tac gac cac ccg acg ctg gcc tcg gag gag aac gtg atc gta gtt tcg 384
 Tyr Asp His Arg Thr Leu Ala Ser Glu Glu Asn Val Ile Val Val Ser
 115 120 125

ctg cag tac cgt gtc gca agt ctt ggg ttt ctc t 418
 Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe Leu
 130 135

<210> 89

<211> 402

<212> DNA

<213> Culex pipiens pipiens strain killcare (S)

<220>

<221> CDS

<222> (1)..(402)

<400> 89

agt gga aag aag gtg gac gca tgg atg ggc att ccg tac gcg cag ccc 48
 Ser Gly Lys Lys Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro
 1 5 10 15

ccg ctg ggt ccg ctc ccg ttt cga cat ccg cga ccc gcc gaa aga tgg 96
 Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp
 20 25 30

acc ggt gtg ctg aac gcg acc aaa cca ccc aac tcc tgc gtc cag atc 144
 Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile
 35 40 45

gtg gac aca gtg ttc ggt gac ttc ccg ggg gcc acc atg tgg aac ccg 192
 Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro
 50 55 60

aac aca ccc ctc tcg gag gac tgt ctg tac atc aac gtg gtc gtg cca 240
 Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro
 65 70 75 80

agg ccg agg ccc aag aat gcc gct gtc atg ctg tgg atc ttc ggg ggt 288
 Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly
 85 90 95

ggc ttc tac tcc ggg act gcc acg ttg gac gtg tac gat cat cggt acg 336
 Gly Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr
 100 105 110

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ctg gcc tcg gag gag aac gtc atc gtc gtt tcg ctc cag tac cgt gtc 384
Leu Ala Ser Glu Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val
115 120 125

gca agt ctt ggt ttt ctc 402
Ala Ser Leu Gly Phe Leu
130

<210> 90
<211> 152
<212> PRT
<213> Culex pipiens pipiens strain Espro (R)

<400> 90
Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val 15
1 5 10 15

Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu 30
20 25 30

Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn 45
35 40 45

Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe 60
50 55 60

Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser 80
65 70 75 80

Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys 95
85 90 95

Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Ser Phe Tyr Ser Gly 110
100 105 110

Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu 125
115 120 125

Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe 140
130 135 140

Leu Phe Leu Gly Thr Pro Glu Ala
145 150

<210> 91
<211> 152
<212> PRT
<213> Culex pipiens quinquefasciatus strain ProR(S)

<400> 91
Lys Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys 15
1 5 10 15

Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro 30
20 25 30

Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu 45
35 40 45

Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val 60
50 55 60

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Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu
65 70 75 80

Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro
85 90 95

Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser
100 105 110

Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu
115 120 125

Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly
130 135 140

Phe Leu Phe Leu Gly Thr Pro Glu
145 150

<210> 92

<211> 148

<212> PRT

<213> Culex pipiens pipiens strain S-LAB (S)

<400> 92

Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val
1 5 10 15

Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu
20 25 30

Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn
35 40 45

Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe
50 55 60

Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser
65 70 75 80

Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys
85 90 95

Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser Gly
100 105 110

Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu
115 120 125

Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe
130 135 140

Leu Phe Leu Gly
145

<210> 93

<211> 152

<212> PRT

<213> Culex pipiens pipiens strain Padova (R)

<400> 93

Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val
1 5 10 15

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Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu
20 25 30

Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn
35 40 45

Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe
50 55 60

Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser
65 70 75 80

Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys
85 90 95

Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Ser Phe Tyr Ser Gly
100 105 110

Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu
115 120 125

Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe
130 135 140

Leu Phe Leu Gly Thr Pro Glu Ala
145 150

<210> 94

<211> 154

<212> PRT

<213> Culex pipiens pipiens strain Praias (R)

<400> 94

Asp Lys Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys
1 5 10 15

Lys Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly
20 25 30

Pro Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val
35 40 45

Leu Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr
50 55 60

Val Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro
65 70 75 80

Leu Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg
85 90 95

Pro Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Ser Phe Tyr
100 105 110

Ser Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser
115 120 125

Glu Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu
130 135 140

Gly Phe Leu Phe Leu Gly Thr Pro Glu Ala
145 150

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<210> 95

<211> 154

<212> PRT

<213> Culex pipiens quinquefasciatus strain Supercar (R)

<400> 95

Asp Lys Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys
1 5 10 15

Lys Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly
20 25 30

Pro Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val
35 40 45

Leu Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr
50 55 60

Val Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro
65 70 75 80

Leu Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg
85 90 95

Pro Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Ser Phe Tyr
100 105 110

Ser Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser
115 120 125

Glu Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu
130 135 140

Gly Phe Leu Phe Leu Gly Thr Pro Glu Ala
145 150

<210> 96

<211> 148

<212> PRT

<213> Culex pipiens pipiens strain Bruges A (S)

<400> 96

Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val
1 5 10 15

Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu
20 25 30

Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn
35 40 45

Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe
50 55 60

Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser
65 70 75 80

Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys
85 90 95

Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Gly Phe Tyr Ser Gly
100 105 110

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Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu
115 120 125

Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe
130 135 140

Leu Phe Leu Gly
145

<210> 97

<211> 152

<212> PRT

<213> Culex pipiens quinquefasciatus strain BO (R)

<400> 97
Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val
1 5 10 15

Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu
20 25 30

Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn
35 40 45

Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe
50 55 60

Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser
65 70 75 80

Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys
85 90 95

Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Ser Phe Tyr Ser Gly
100 105 110

Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu
115 120 125

Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe
130 135 140

Leu Phe Leu Gly Thr Pro Glu Ala
145 150

<210> 98

<211> 148

<212> PRT

<213> Culex pipiens quinquefasciatus strain DJI (R)

<400> 98
Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val
1 5 10 15

Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu
20 25 30

Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn
35 40 45

Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe
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50	55	60													
Gly	Asp	Phe	Pro	Gly	Ala	Thr	Met	Trp	Asn	Pro	Asn	Thr	Pro	Leu	Ser
65				70					75						80
Glu	Asp	Cys	Leu	Tyr	Ile	Asn	Val	Val	Val	Pro	Arg	Pro	Arg	Pro	Lys
		85					90							95	
Asn	Ala	Ala	Val	Met	Leu	Trp	Ile	Phe	Gly	Gly	Ser	Phe	Tyr	Ser	Gly
		100					105							110	
Thr	Ala	Thr	Leu	Asp	Val	Tyr	Asp	His	Arg	Thr	Leu	Ala	Ser	Glu	Glu
		115					120							125	
Asn	Val	Ile	Val	Val	Ser	Leu	Gln	Tyr	Arg	Val	Ala	Ser	Leu	Gly	Phe
	130				135					140					
Leu	Phe	Leu	Gly												
145															

<210> 99
<211> 152
<212> PRT
<213> Culex pipiens quinquefasciatus strain Harare (R)

<400> 99
Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val
1 5 10 15

Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu
20 25 30

Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn
35 40 45

Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe
50 55 60

Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser
65 70 75 80

Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys
85 90 95

Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Ser Phe Tyr Ser Gly
100 105 110

Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu
115 120 125

Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe
130 135 140

Leu Phe Leu Gly Thr Pro Glu Ala
145 150

<210> 100
<211> 152
<212> PRT
<213> Culex pipiens quinquefasciatus strain Martinique (R)

<400> 100
Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val
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1	5	10	15
Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu			
20	25	30	
Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn			
35	40	45	
Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe			
50	55	60	
Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser			
65	70	75	80
Glu Asp Cys Leu Tyr Ile Asn Val Val Pro Arg Pro Arg Pro Lys			
85	90	95	
Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Ser Phe Tyr Ser Gly			
100	105	110	
Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu			
115	120	125	
Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe			
130	135	140	
Leu Phe Leu Gly Thr Pro Glu Ala			
145	150		
<210> 101			
<211> 148			
<212> PRT			
<213> Culex pipiens pipiens strain Barriol (R)			
<400> 101			
Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val			
1	5	10	15
Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu			
20	25	30	
Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn			
35	40	45	
Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe			
50	55	60	
Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser			
65	70	75	80
Glu Asp Cys Leu Tyr Ile Asn Val Val Pro Arg Pro Arg Pro Lys			
85	90	95	
Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Ser Phe Tyr Ser Gly			
100	105	110	
Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu			
115	120	125	
Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe			
130	135	140	
Leu Phe Leu Gly			

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145

<210> 102
<211> 148
<212> PRT

<213> Culex pipiens pipiens strain Bleuet (S)

<400> 102

Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val
1 5 10 15

Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu
20 25 30

Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn
35 40 45

Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe
50 55 60

Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser
65 70 75 80

Glu Asp Cys Leu Tyr Ile Asn Val Val Pro Arg Pro Arg Pro Lys
85 90 95

Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser Gly
100 105 110

Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu
115 120 125

Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe
130 135 140

Leu Phe Leu Gly
145

<210> 103
<211> 148
<212> PRT

<213> Culex pipiens pipiens strain Bruges B (S)

<400> 103

Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val
1 5 10 15

Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu
20 25 30

Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn
35 40 45

Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe
50 55 60

Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser
65 70 75 80

Glu Asp Cys Leu Tyr Ile Asn Val Val Pro Arg Pro Arg Pro Lys
85 90 95

Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser Gly
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100	105	110	
Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu			
115	120	125	
Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe			
130	135	140	
Leu Phe Leu Gly			
145			
<210> 104			
<211> 148			
<212> PRT			
<213> Culex pipiens pipiens strain Heteren (S)			
<400> 104			
Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val			
1	5	10	15
Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu			
20	25	30	
Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn			
35	40	45	
Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe			
50	55	60	
Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser			
65	70	75	80
Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys			
85	90	95	
Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser Gly			
100	105	110	
Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu			
115	120	125	
Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe			
130	135	140	
Leu Phe Leu Gly			
145			
<210> 105			
<211> 149			
<212> PRT			
<213> Culex pipiens quinquefasciatus strain Ling (S)			
<400> 105			
Gln Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys			
1	5	10	15
Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro			
20	25	30	
Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu			
35	40	45	
Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val			

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50 55 60
Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu
65 70 75 80

Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro
85 90 95

Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser
100 105 110

Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu
115 120 125

Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly
130 135 140

Phe Leu Phe Leu Gly
145

<210> 106

<211> 148

<212> PRT

<213> Culex pipiens quinquefasciatus strain Mao (S)

<400> 106

Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val
1 5 10 15

Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu
20 25 30

Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn
35 40 45

Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe
50 55 60

Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser
65 70 75 80

Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys
85 90 95

Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser Gly
100 105 110

Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu
115 120 125

Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe
130 135 140

Leu Phe Leu Gly
145

<210> 107

<211> 144

<212> PRT

<213> Culex pipiens quinquefasciatus strain TemR (S)

<400> 107

Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val Asp
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1	5	10	15	
Ala	Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro	Leu Arg		
	20	25	30	
Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val	Leu Asn Ala			
	35	40	45	
Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val	Phe Gly			
	50	55	60	
Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser	Glu			
	65	70	75	80
Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro	Lys Asn			
	85	90	95	
Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser Gly Thr				
	100	105	110	
Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Thr Ser Glu Glu Asn				
	115	120	125	
Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe Leu				
	130	135	140	
<210> 108				
<211> 148				
<212> PRT				
<213> Culex torrentium strain Uppsala				
<400> 108				
Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Val				
	1	5	10	15
Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu				
	20	25	30	
Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn				
	35	40	45	
Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe				
	50	55	60	
Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser				
	65	70	75	80
Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys				
	85	90	95	
Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser Gly				
	100	105	110	
Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu				
	115	120	125	
Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe				
	130	135	140	
Leu Phe Leu Gly				
	145			
<210> 109				

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<211> 148

<212> PRT

<213> Culex pipiens quinquefasciatus strain Trans (S)

<400> 109

Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val
1 5 10 15

Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu
20 25 30

Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn
35 40 45

Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe
50 55 60

Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser
65 70 75 80

Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys
85 90 95

Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser Gly
100 105 110

Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Thr Ser Glu Glu
115 120 125

Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe
130 135 140

Leu Phe Leu Gly
145

<210> 110

<211> 137

<212> PRT

<213> Culex pipiens quinquefasciatus strain BED (S)

<400> 110

Thr Leu Glu Ala Pro Ser Gly Lys Lys Val Asp Ala Trp Met Gly Ile
1 5 10 15

Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg
20 25 30

Pro Ala Glu Arg Trp Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn
35 40 45

Ser Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala
50 55 60

Thr Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile
65 70 75 80

Asn Val Val Val Pro Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu
85 90 95

Trp Ile Phe Gly Gly Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val
100 105 110

Tyr Asp His Arg Thr Leu Ala Ser Glu Glu Asn Val Ile Val Val Ser
115 120 125

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Leu Gln Tyr Arg Val Ala Ser Leu Gly
130 135

<210> 111
<211> 144

<212> PRT

<213> Culex pipiens quinquefasciatus strain BSQ (S)

<400> 111
Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val
1 5 10 15

Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu
20 25 30

Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn
35 40 45

Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe
50 55 60

Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser
65 70 75 80

Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys
85 90 95

Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser Gly
100 105 110

Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu
115 120 125

Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe
130 135 140

<210> 112
<211> 137

<212> PRT

<213> Culex pipiens quinquefasciatus strain Brazza (S)

<400> 112
Leu Glu Ala Pro Ser Gly Lys Lys Val Asp Ala Trp Met Gly Ile Pro
1 5 10 15

Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg Pro
20 25 30

Ala Glu Arg Trp Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn Ser
35 40 45

Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala Thr
50 55 60

Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile Asn
65 70 75 80

Val Val Val Pro Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu Trp
85 90 95

Ile Phe Gly Gly Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val Tyr
100 105 110

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Asp His Arg Thr Leu Ala Ser Glu Glu Asn Val Ile Val Val Ser Leu
115 120 125

Gln Tyr Arg Val Ala Ser Leu Gly Phe
130 135

<210> 113

<211> 144

<212> PRT

<213> Culex pipiens quinquefasciatus strain Bouake (R)

<400> 113

Gly Lys Ile Arg Gly Thr Thr Leu Glu Ala Pro Ser Gly Lys Lys Val
1 5 10 15

Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu
20 25 30

Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp Thr Gly Val Leu Asn
35 40 45

Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe
50 55 60

Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser
65 70 75 80

Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro Arg Pro Arg Pro Lys
85 90 95

Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser Gly
100 105 110

Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr Leu Ala Ser Glu Glu
115 120 125

Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe
130 135 140

<210> 114

<211> 138

<212> PRT

<213> Culex pipiens quinquefasciatus strain Thai (S)

<400> 114

Thr Leu Glu Ala Pro Ser Gly Lys Lys Val Asp Ala Trp Met Gly Ile
1 5 10 15

Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg
20 25 30

Pro Ala Glu Arg Trp Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn
35 40 45

Ser Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala
50 55 60

Thr Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile
65 70 75 80

Asn Val Val Val Pro Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu
85 90 95

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Trp Ile Phe Gly Gly Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val
100 105 110
Tyr Asp His Arg Thr Leu Ala Ser Glu Glu Asn Val Ile Val Val Ser
115 120 125
Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe
130 135

<210> 115
<211> 141
<212> PRT
<213> Culex pipiens quinquefasciatus strain Madurai (S)

<400> 115
Leu Glu Ala Pro Ser Gly Lys Lys Val Asp Ala Trp Met Gly Ile Pro
1 5 10 15
Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg Pro
20 25 30
Ala Glu Arg Trp Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn Ser
35 40 45
Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala Thr
50 55 60
Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile Asn
65 70 75 80
Val Val Val Pro Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu Trp
85 90 95
Ile Phe Gly Gly Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val Tyr
100 105 110
Asp His Arg Thr Leu Ala Ser Glu Glu Asn Val Ile Val Val Ser Leu
115 120 125
Gln Tyr Arg Val Ala Ser Leu Gly Phe Leu Phe Leu Gly
130 135 140

<210> 116
<211> 141
<212> PRT
<213> Culex pipiens quinquefasciatus strain Recife (R)

<400> 116
Leu Glu Ala Pro Ser Gly Lys Lys Val Asp Ala Trp Met Gly Ile Pro
1 5 10 15
Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg Pro
20 25 30
Ala Glu Arg Trp Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn Ser
35 40 45
Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala Thr
50 55 60

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Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile Asn
65 70 75 80

Val Val Val Pro Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu Trp
85 90 95

Ile Phe Gly Gly Ser Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val Tyr
100 105 110

Asp His Arg Thr Leu Ala Ser Glu Glu Asn Val Ile Val Val Ser Leu
115 120 125

Gln Tyr Arg Val Ala Ser Leu Gly Phe Leu Phe Leu Gly
130 135 140

<210> 117

<211> 137

<212> PRT

<213> Culex pipiens quinquefasciatus strain Brésil (S)

<400> 117

Leu Glu Ala Pro Ser Gly Lys Lys Val Asp Ala Trp Met Gly Ile Pro
1 5 10 15

Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg Pro
20 25 30

Ala Glu Arg Trp Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn Ser
35 40 45

Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala Thr
50 55 60

Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile Asn
65 70 75 80

Val Val Val Pro Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu Trp
85 90 95

Ile Phe Gly Gly Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val Tyr
100 105 110

Asp His Arg Thr Leu Ala Ser Glu Glu Asn Val Ile Val Val Ser Leu
115 120 125

Gln Tyr Arg Val Ala Ser Leu Gly Phe
130 135

<210> 118

<211> 139

<212> PRT

<213> Culex pipiens quinquefasciatus strain Moorea (S)

<400> 118

Thr Leu Glu Ala Pro Ser Gly Lys Lys Val Asp Ala Trp Met Gly Ile
1 5 10 15

Pro Tyr Ala Gln Pro Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg
20 25 30

Pro Ala Glu Arg Trp Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn
35 40 45

s644LISTGB80
Ser Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala
50 55 60

Thr Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile
65 70 75 80

Asn Val Val Val Pro Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu
85 90 95

Trp Ile Phe Gly Gly Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val
100 105 110

Tyr Asp His Arg Thr Leu Ala Ser Glu Glu Asn Val Ile Val Val Ser
115 120 125

Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe Leu
130 135

<210> 119

<211> 134

<212> PRT

<213> Culex pipiens pipiens strain killcare (S)

<400> 119

Ser Gly Lys Lys Val Asp Ala Trp Met Gly Ile Pro Tyr Ala Gln Pro
1 5 10 15

Pro Leu Gly Pro Leu Arg Phe Arg His Pro Arg Pro Ala Glu Arg Trp
20 25 30

Thr Gly Val Leu Asn Ala Thr Lys Pro Pro Asn Ser Cys Val Gln Ile
35 40 45

Val Asp Thr Val Phe Gly Asp Phe Pro Gly Ala Thr Met Trp Asn Pro
50 55 60

Asn Thr Pro Leu Ser Glu Asp Cys Leu Tyr Ile Asn Val Val Val Pro
65 70 75 80

Arg Pro Arg Pro Lys Asn Ala Ala Val Met Leu Trp Ile Phe Gly Gly
85 90 95

Gly Phe Tyr Ser Gly Thr Ala Thr Leu Asp Val Tyr Asp His Arg Thr
100 105 110

Leu Ala Ser Glu Glu Asn Val Ile Val Val Ser Leu Gln Tyr Arg Val
115 120 125

Ala Ser Leu Gly Phe Leu
130

<210> 120

<211> 2527

<212> DNA

<213> Anopheles gambiae strain YAO

<400> 120

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tcagacgcata ttttacacc atatataagg cacggtgagt ccgcacgaaat tatagatgcc 180
gagttggca cgctcgagca tgtacacagt ggagcaacgc cggccgcacg cggctctgacg 240
aggcgcgact caaactcggg taagtacgcg attggaaatg gggggacgtt taccctaccg 300
tgtactacaa cgcactttac ccccacgcac acgcacccgc agacgcgaac gacaacgatc 360

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cgctgggtt caacacggat aaggggcgca tccgcggcat tacggtcgat gcccccagcg 420
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 ggttccgtca tcgcggccg gccgaaaagt ggaccggcgt gctgaacacg accacaccgc 540
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 ggaaccggaa cacgcccctg tccgaggact gtctgtacat taacgtgggtg gcaccggc 660
 cccggcccaa gaatgcggcc gtcatgctgt ggatcttcgg cggcagcttc tactccggca 720
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 aaccgcctaa ccccaccctt ggctacaccg aggacgagaa agacttttagc cggaaagatca 1920
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 gcagcgaaatt ccccgagttt cccaaaggcaca ccgcggccacgg acggcactat ctggagctgg 2100
 gcctcaacac gtcccttcgtt ggtcgccggcc cacgggtttag gcatgtgtgcc ttctggaaaga 2160
 agtaccccttcc ccagcttagtt gcagctaccc tttatcttttcaaac agaaaccccc 2220
 ttcgcgttcc ccatcagggt ccagattaca ataacaaatg tttatcttttcaaac tcacgtatct 2280
 tttcccaaa acagcgaaacc taccaggccc agcaccggcc agtgcgttcc tttatcttttcaaac 2340
 cgcattttt taccgacctg atctgatcgt gctgcgttcc tttatcttttcaaac 2400
 cagattcata caataattac taccatccatcc atggccttagt tttatcttttcaaac 2460
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 taggact 2527

<210> 121
 <211> 2214
 <212> DNA
 <213> Anopheles gambiae strain YAO

<220>
 <221> CDS
 <222> (1)..(2214)

<400> 121 atg gag atc cga ggg ctg ctg atg ggt aga ctg cgg tta gga cgg cgg Met Glu Ile Arg Gly Leu Leu Met Gly Arg Leu Arg Leu Gly Arg Arg 1 5 10 15	48
atg gtt ccg ctg ggt ctg ctc ggc gtg acc ggc ctg cta cta atc ctg Met Val Pro Leu Gly Leu Leu Gly Val Thr Ala Leu Leu Ile Leu 20 25 30	96
cca ccc tcc gcg ctg gtg cag ggc cgg cac cac gag ctc aac aat ggt Pro Pro Ser Ala Leu Val Gln Gly Arg His His Glu Leu Asn Asn Gly 35 40 45	144
gcc gcc atc gga tcg cat cag ctg tcg gct gcc gcc ggt gtt ggc ctt Ala Ala Ile Gly Ser His Gln Leu Ser Ala Ala Ala Gly Val Gly Leu	192

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50	55	60	
tcc tcc cag tcc gcc cag tcc gga tcg ctc gca tcc ggt gtg atg tca Ser Ser Gln Ser Ala Gln Ser Gly Ser Leu Ala Ser Gly Val Met Ser 65 70 75 80		240	
tcc gtt cct gct gcc gga gcg tca tcc tcc tcg tcg tcg ctg ctg Ser Val Pro Ala Ala Gly Ala Ser Ser Ser Ser Ser Leu Leu 85 90 95		288	
tca tcg tca gcc gag gac gac gtg gcg cgc att act ctc agc aag gac Ser Ser Ala Glu Asp Asp Val Ala Arg Ile Thr Leu Ser Lys Asp 100 105 110		336	
gca gac gca ttt ttt aca cca tat ata ggt cac ggt gag tcc gca cga Ala Asp Ala Phe Phe Thr Pro Tyr Ile Gly His Gly Glu Ser Ala Arg 115 120 125		384	
att ata gat gcc gag ttg ggc acg ctc gag cat gta cac agt gga gca Ile Ile Asp Ala Glu Leu Gly Thr Leu Glu His Val His Ser Gly Ala 130 135 140		432	
acg ccg cgg cga cgc ggt ctg acg agg cgc gag tca aac tcg gac gcg Thr Pro Arg Arg Arg Gly Leu Thr Arg Arg Glu Ser Asn Ser Asp Ala 145 150 155 160		480	
aac gac aac gat ccg ctg gtg gtc aac acg gat aag ggg cgc atc cgc Asn Asp Asn Asp Pro Leu Val Val Asn Thr Asp Lys Gly Arg Ile Arg 165 170 175		528	
ggc att acg gtc gat gcc ccc agc ggc aag aag gtg gac gtg tgg ctc Gly Ile Thr Val Asp Ala Pro Ser Gly Lys Lys Val Asp Val Trp Leu 180 185 190		576	
ggc att ccc tac gcc cag ccg gtc ggg ccg cta cggttccgtcat Gly Ile Pro Tyr Ala Gln Pro Pro Val Gly Pro Leu Arg Phe Arg His 195 200 205		624	
ccg cgg ccg gcc gaa aag tgg acc ggc gtg ctg aac acg acc aca ccg Pro Arg Pro Ala Glu Lys Trp Thr Gly Val Leu Asn Thr Thr Thr Pro 210 215 220		672	
ccc aac agc tgc gtg cag atc gtg gac acc gtg ttc ggc gac ttc ccg Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro 225 230 235 240		720	
ggc gcg acc atg tgg aac ccg aac acg ccc ctg tcc gag gac tgt ctg Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu 245 250 255		768	
tac att aac gtg gtg gca ccg cgg ccc cgg ccc aag aat gcg gcc gtc Tyr Ile Asn Val Val Ala Pro Arg Pro Arg Pro Lys Asn Ala Ala Val 260 265 270		816	
atg ctg tgg atc ttc ggc ggc agc ttc tac tcc ggc acc gcc acc ctg Met Leu Trp Ile Phe Gly Gly Ser Phe Tyr Ser Gly Thr Ala Thr Leu 275 280 285		864	
gac gtg tac gac cac cgg gcg ctt gcg tcg gag gag aac gtg atc gtg Asp Val Tyr Asp His Arg Ala Leu Ala Ser Glu Glu Asn Val Ile Val 290 295 300		912	
gtg tcg ctg cag tac cgc gtg gcc agt ctg ggc ttc ctg ttt ctc ggc		960	

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val	Ser	Leu	Gln	Tyr	Arg	Val	Ala	Ser	Leu	Gly	Phe	Leu	Phe	Leu	Gly			
305						310			315							320		
acc	ccg	gaa	gcg	ccg	ggc	aat	gcg	gga	ctg	tcc	gat	cag	aac	ctt	gcg		1008	
Thr	Pro	Glu	Ala	Pro	Gly	Asn	Ala	Gly	Leu	Phe	Asp	Gln	Asn	Leu	Ala			
						325			330						335			
cta	cgc	tgg	gtg	cg	gac	aac	att	ca	cg	tcc	ggt	ggt	gat	ccg	tcg		1056	
Leu	Arg	Trp	Val	Arg	Asp	Asn	Ile	His	Arg	Phe	Gly	Gly	Asp	Pro	Ser			
						340			345						350			
cgc	gtg	aca	ctg	tcc	ggc	gag	agt	gcc	ggt	gcc	gtc	tcg	gtg	tcg	ctg		1104	
Arg	Val	Thr	Leu	Phe	Gly	Glu	Ser	Ala	Gly	Ala	Val	Ser	Val	Ser	Leu			
						355			360						365			
cat	ctg	ctg	tcc	gcc	ctt	tcc	cgc	gat	ctg	tcc	cag	cg	gcc	atc	ctg		1152	
His	Leu	Leu	Ser	Ala	Leu	Ser	Arg	Asp	Leu	Phe	Gln	Arg	Ala	Ile	Leu			
						370			375						380			
cag	agc	ggc	tcg	ccg	acg	gca	ccg	tgg	gca	ttg	gta	tcg	cgc	gag	gaa		1200	
Gln	Ser	Gly	Ser	Pro	Thr	Ala	Pro	Trp	Ala	Leu	Val	Ser	Arg	Glu	Glu			
						385			390						395			
gcc	acg	cta	aga	gca	ctg	cg	ttg	gcc	gag	gcg	gtc	ggc	tgc	ccg	cac		1248	
Ala	Thr	Leu	Arg	Ala	Leu	Arg	Leu	Ala	Glu	Ala	Val	Gly	Cys	Pro	His			
						405			410						415			
gaa	ccg	agc	aag	ctg	agc	gat	g	tc	g	tg	ctg	cgc	ggc	aag	gat		1296	
Glu	Pro	Ser	Lys	Leu	Ser	Asp	Ala	Val	Glu	Cys	Leu	Arg	Gly	Lys	Asp			
						420			425						430			
ccg	cac	gtg	ctg	gtc	aac	aac	gag	tgg	ggc	acg	ctc	ggc	att	tgc	gag		1344	
Pro	His	Va	Leu	Val	Asn	Asn	Glu	Trp	Gly	Thr	Leu	Gly	Ile	Cys	Glu			
						435			440						445			
tcc	ccg	tcc	gtg	ccg	gtg	gtc	gac	ggt	g	cc	ttc	ctg	gac	gag	acg	ccg		1392
Phe	Pro	Phe	Val	Pro	Val	Val	Asp	Gly	Ala	Phe	Leu	Asp	Glu	Thr	Pro			
						450			455						460			
cag	cgt	tcg	ctc	gcc	agc	ggg	cgc	tcc	aag	aag	acg	gag	atc	ctc	acc		1440	
Gln	Arg	Ser	Leu	Ala	Ser	Gly	Arg	Phe	Lys	Lys	Thr	Glu	Ile	Leu	Thr			
						465			470						475			
ggc	agc	aac	acg	gag	gag	ggc	ta	ta	ttc	atc	atc	ta	ta	ctg	acc		1488	
Gly	Ser	Asn	Thr	Glu	Glu	Gly	Tyr	Tyr	Phe	Ile	Ile	Tyr	Tyr	Leu	Thr			
						485			490						495			
gag	ctg	ctg	cgc	aag	gag	gag	ggc	gtg	acc	gtg	acg	cgc	gag	gag	ttc		1536	
Glu	Leu	Leu	Arg	Lys	Glu	Glu	Gly	Val	Thr	Val	Thr	Arg	Glu	Glu	Phe			
						500			505						510			
ctg	cag	g	gtg	cg	g	g	ctc	aac	ccg	ta	gtg	aac	gg	gcg	gc	cg		1584
Leu	Gln	Ala	Val	Arg	Glu	Leu	Asn	Pro	Tyr	Val	Asn	Gly	Ala	Ala	Ala	Arg		
						515			520						525			
cag	gcg	atc	gtg	tcc	gag	ta	cc	gac	tgg	acc	gag	ccg	gac	aac	ccg		1632	
Gln	Ala	Ile	Val	Phe	Glu	Tyr	Thr	Asp	Trp	Thr	Glu	Pro	Asp	Asn	Pro			
						530			535						540			
aac	agc	aac	cgg	gac	g	ctg	gac	aag	atg	gtg	ggc	gac	tat	cac	ttc		1680	
Asn	Ser	Asn	Arg	Asp	A	Leu	Asp	Lys	Met	Val	Gly	Asp	Tyr	His	Phe			
						545			550						555			

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acc tgc aac gtg aac gag ttc gcg cag	cgg tac gcc gag gag ggc aac	1728	
Thr Cys Asn Val Asn Glu Phe Ala Gln	Arg Tyr Ala Glu Glu Gly Asn		
565	570	575	
aac gtc tac atg tat ctg tac acg cac	cgc agc aaa ggc aac ccg tgg	1776	
Asn Val Tyr Met Tyr Leu Tyr Thr His	Arg Ser Lys Gly Asn Pro Trp		
580	585	590	
ccg cgc tgg acg ggc gtg atg cac gac	gag atc aac tac gtg ttc	1824	
Pro Arg Trp Thr Gly Val Met His Gly	Asp Glu Ile Asn Tyr Val Phe		
595	600	605	
ggc gaa ccg ctc aac ccc acc ctc ggc	tac acc gag gac gag aaa gac	1872	
Gly Glu Pro Leu Asn Pro Thr Leu Gly	Tyr Thr Glu Asp Glu Lys Asp		
610	615	620	
ttt agc cgg aag atc atg cga tac tgg	tct aac ttt gcc aaa acc ggc	1920	
Phe Ser Arg Lys Ile Met Arg Tyr Trp	Ser Asn Phe Ala Lys Thr Gly		
625	630	635	640
aat cca aat ccc aac aca gcc agc agc	gaa ttc ccc gag tgg ccc aag	1968	
Asn Pro Asn Pro Asn Thr Ala Ser Ser	Glu Phe Pro Glu Trp Pro Lys		
645	650	655	
cac acc gcc cac gga cgg cac tat ctg	gag ctg ggc ctc aac acg tcc	2016	
His Thr Ala His Gly Arg His Tyr	Leu Glu Leu Gly Leu Asn Thr Ser		
660	665	670	
tac ctt ccc cag cta gtt gca gct acc	tcg aac cta cca ggg cca gca	2112	
Tyr Leu Pro Gln Leu Val Ala Ala Thr	Ser Asn Leu Pro Gly Pro Ala		
690	695	700	
ccg ccc agt gaa ccg tgc gaa agc agc	gca ttt ttt tac cga cct gat	2160	
Pro Pro Ser Glu Pro Cys Glu Ser Ser	Ala Phe Phe Tyr Arg Pro Asp		
705	710	715	720
ctg atc gtg ctg ctg gtg tcg ctt acg	gcg acc gtc aga ttc ata	2208	
Leu Ile Val Leu Leu Val Ser Leu Leu	Thr Ala Thr Val Arg Phe Ile		
725	730	735	
caa taa		2214	
Gln			

<210> 122
<211> 737
<212> PRT
<213> Anopheles gambiae strain YAO

<400> 122
Met Glu Ile Arg Gly Leu Leu Met Gly Arg Leu Arg Leu Gly Arg Arg
1 5 10 15
Met Val Pro Leu Gly Leu Leu Gly Val Thr Ala Leu Leu Leu Ile Leu
20 25 30
Pro Pro Ser Ala Leu Val Gln Gly Arg His His Glu Leu Asn Asn Gly
35 40 45

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Ala Ala Ile Gly Ser His Gln Leu Ser Ala Ala Ala Gly Val Gly Leu
50 55 60

Ser Ser Gln Ser Ala Gln Ser Gly Ser Leu Ala Ser Gly Val Met Ser
65 70 75 80

Ser Val Pro Ala Ala Gly Ala Ser Ser Ser Ser Ser Ser Leu Leu
85 90 95

Ser Ser Ser Ala Glu Asp Asp Val Ala Arg Ile Thr Leu Ser Lys Asp
100 105 110

Ala Asp Ala Phe Phe Thr Pro Tyr Ile Gly His Gly Glu Ser Ala Arg
115 120 125

Ile Ile Asp Ala Glu Leu Gly Thr Leu Glu His Val His Ser Gly Ala
130 135 140

Thr Pro Arg Arg Arg Gly Leu Thr Arg Arg Glu Ser Asn Ser Asp Ala
145 150 155 160

Asn Asp Asn Asp Pro Leu Val Val Asn Thr Asp Lys Gly Arg Ile Arg
165 170 175

Gly Ile Thr Val Asp Ala Pro Ser Gly Lys Lys Val Asp Val Trp Leu
180 185 190

Gly Ile Pro Tyr Ala Gln Pro Pro Val Gly Pro Leu Arg Phe Arg His
195 200 205

Pro Arg Pro Ala Glu Lys Trp Thr Gly Val Leu Asn Thr Thr Thr Pro
210 215 220

Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro
225 230 235 240

Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu
245 250 255

Tyr Ile Asn Val Val Ala Pro Arg Pro Arg Pro Lys Asn Ala Ala Val
260 265 270

Met Leu Trp Ile Phe Gly Gly Ser Phe Tyr Ser Gly Thr Ala Thr Leu
275 280 285

Asp Val Tyr Asp His Arg Ala Leu Ala Ser Glu Glu Asn Val Ile Val
290 295 300

Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe Leu Phe Leu Gly
305 310 315 320

Thr Pro Glu Ala Pro Gly Asn Ala Gly Leu Phe Asp Gln Asn Leu Ala
325 330 335

Leu Arg Trp Val Arg Asp Asn Ile His Arg Phe Gly Gly Asp Pro Ser
340 345 350

Arg Val Thr Leu Phe Gly Glu Ser Ala Gly Ala Val Ser Val Ser Leu
355 360 365

His Leu Leu Ser Ala Leu Ser Arg Asp Leu Phe Gln Arg Ala Ile Leu
370 375 380

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Gln Ser Gly Ser Pro Thr Ala Pro Trp Ala Leu Val Ser Arg Glu Glu
385 390 395 400

Ala Thr Leu Arg Ala Leu Arg Leu Ala Glu Ala Val Gly Cys Pro His
405 410 415

Glu Pro Ser Lys Leu Ser Asp Ala Val Glu Cys Leu Arg Gly Lys Asp
420 425 430

Pro His Val Leu Val Asn Asn Glu Trp Gly Thr Leu Gly Ile Cys Glu
435 440 445

Phe Pro Phe Val Pro Val Val Asp Gly Ala Phe Leu Asp Glu Thr Pro
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Gln Arg Ser Leu Ala Ser Gly Arg Phe Lys Lys Thr Glu Ile Leu Thr
465 470 475 480

Gly Ser Asn Thr Glu Glu Gly Tyr Tyr Phe Ile Ile Tyr Tyr Leu Thr
485 490 495

Glu Leu Leu Arg Lys Glu Glu Gly val Thr Val Thr Arg Glu Glu Phe
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Leu Gln Ala Val Arg Glu Leu Asn Pro Tyr Val Asn Gly Ala Ala Arg
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Gln Ala Ile Val Phe Glu Tyr Thr Asp Trp Thr Glu Pro Asp Asn Pro
530 535 540

Asn Ser Asn Arg Asp Ala Leu Asp Lys Met Val Gly Asp Tyr His Phe
545 550 555 560

Thr Cys Asn Val Asn Glu Phe Ala Gln Arg Tyr Ala Glu Glu Gly Asn
565 570 575

Asn Val Tyr Met Tyr Leu Tyr Thr His Arg Ser Lys Gly Asn Pro Trp
580 585 590

Pro Arg Trp Thr Gly Val Met His Gly Asp Glu Ile Asn Tyr Val Phe
595 600 605

Gly Glu Pro Leu Asn Pro Thr Leu Gly Tyr Thr Glu Asp Glu Lys Asp
610 615 620

Phe Ser Arg Lys Ile Met Arg Tyr Trp Ser Asn Phe Ala Lys Thr Gly
625 630 635 640

Asn Pro Asn Pro Asn Thr Ala Ser Ser Glu Phe Pro Glu Trp Pro Lys
645 650 655

His Thr Ala His Gly Arg His Tyr Leu Glu Leu Gly Leu Asn Thr Ser
660 665 670

Phe Val Gly Arg Gly Pro Arg Leu Arg Gln Cys Ala Phe Trp Lys Lys
675 680 685

Tyr Leu Pro Gln Leu Val Ala Ala Thr Ser Asn Leu Pro Gly Pro Ala
690 695 700

Pro Pro Ser Glu Pro Cys Glu Ser Ser Ala Phe Phe Tyr Arg Pro Asp
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Leu Ile Val Leu Leu val ser Leu Leu Thr Ala Thr Val Arg Phe Ile
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Met Val Pro Leu Gly Leu Leu Gly Val Thr Ala Leu Leu Leu Ile Leu
20 25 30

cca ccc tcc gcg ctg gtg cag gac cgg cac cac gag ctc aac aat ggt
Pro Pro Ser Ala Leu Val Gln Gly Arg His His Glu Leu Asn Asn Gly
35 40 45

gcc gcc atc gga tcg cat cag ctg tcg gct gcc gcc ggt gtt ggc ctt
Ala Ala Ile Gly Ser His Gln Leu Ser Ala Ala Gly Val Gly Leu
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tcc tcc cag tcc gcc cag tcc gga tcg ctc gca tcc ggt gtg atg tca
Ser Ser Gln Ser Ala Gln Ser Gly Ser Leu Ala Ser Gly Val Met Ser
65 70 75 80

tcc gtt cct gct gcc gga gcg tca tcc tcc tcg tcg tcg ctg ctg
Ser Val Pro Ala Ala Gly Ala Ser Ser Ser Ser Ser Ser Ser Leu Leu
288

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Ser	Ser	Ser	Ala	Glu	Asp	Asp	Val	Ala	Arg	Ile	Thr	Leu	Ser	Lys	Asp		
100								105					110				
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Ala	Asp	Ala	Phe	Phe	Thr	Pro	Tyr	Ile	Gly	His	Gly	Glu	Ser	Val	Arg		
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att	ata	gat	gcc	gag	ttg	ggc	acg	ctc	gag	cat	gtc	cac	agt	gga	gca	432	
Ile	Ile	Asp	Ala	Glu	Leu	Gly	Thr	Leu	Glu	His	Val	His	Ser	Gly	Ala		
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Thr	Pro	Arg	Arg	Arg	Gly	Leu	Thr	Arg	Arg	Glu	Ser	Asn	Ser	Asp	Ala		
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Asn	Asp	Asn	Asp	Pro	Leu	Val	Val	Asn	Thr	Asp	Lys	Gly	Arg	Ile	Arg		
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Pro	Arg	Pro	Ala	Glu	Lys	Trp	Thr	Gly	Val	Leu	Asn	Thr	Thr	Thr	Pro		
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ccc	aac	agc	tgc	gtg	cag	atc	gtg	gac	acc	gtg	tcc	ggc	gac	tcc	ccg	720	
Pro	Asn	Ser	Cys	Val	Gln	Ile	Val	Asp	Thr	Val	Phe	Gly	Asp	Phe	Pro		
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Tyr	Ile	Asn	Val	Val	Ala	Pro	Arg	Pro	Arg	Pro	Lys	Asn	Ala	Ala	Val		
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atg	ctg	tgg	atc	tcc	ggc	ggc	ggc	tcc	tac	tcc	ggc	acc	gcc	acc	ctg	864	
Met	Leu	Trp	Ile	Phe	Gly	Gly	Gly	Phe	Tyr	Ser	Gly	Thr	Ala	Thr	Leu		
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Asp	Val	Tyr	Asp	His	Arg	Ala	Leu	Ala	Ser	Glu	Glu	Asn	Val	Ile	Val		
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gtg	tgc	ctg	cag	tac	cg	gtg	gcc	agt	ctg	ggc	tcc	ctg	ttt	ctc	ggc	960	
Val	Ser	Leu	Gln	Tyr	Arg	Val	Ala	Ser	Leu	Gly	Phe	Leu	Phe	Leu	Gly		
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acc	ccg	gaa	g	ccg	ggc	aat	g	ccg	gg	ttc	at	cag	aac	ctt	g	1008	
Thr	Pro	Glu	Ala	Pro	Gly	Asn	Ala	Gly	Leu	Phe	Asp	Gln	Asn	Leu	Ala		
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Arg	Val	Thr	Leu	Phe	Gly	Glu	Ser	Ala	Gly	Ala	Val	Ser	Val	Ser	Leu		
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cat	ctg	ctg	tcc	gcc	ctg	tcc	cgc	gat	ctg	tcc	cag	cg	gcc	atc	ctg		1152
His	Leu	Leu	Ser	Ala	Leu	Ser	Arg	Asp	Leu	Phe	Gln	Arg	Ala	Ile	Leu		
370				375					380								
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Gln	Ser	Gly	Ser	Pro	Thr	Ala	Pro	Trp	Ala	Leu	Val	Ser	Arg	Glu	Glu		
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Glu	Pro	Ser	Lys	Leu	Ser	Asp	Ala	Val	Glu	Cys	Leu	Arg	Gly	Lys	Asp		
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Pro	His	Val	Leu	Val	Asn	Asn	Glu	Trp	Gly	Thr	Leu	Gly	Ile	Cys	Glu		
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Phe	Pro	Phe	Val	Pro	Val	Val	Asp	Gly	Ala	Phe	Leu	Asp	Glu	Thr	Pro		
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cag	cgt	tcg	ctc	gcc	agc	ggg	cgc	tcc	aag	aag	acg	gag	atc	ctc	acc		1440
Gln	Arg	Ser	Leu	Ala	Ser	Gly	Arg	Phe	Lys	Lys	Thr	Glu	Ile	Leu	Thr		
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Gly	Ser	Asn	Thr	Glu	Glu	Gly	Tyr	Tyr	Phe	Ile	Ile	Tyr	Tyr	Leu	Thr		
485									490					495			
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Glu	Leu	Leu	Arg	Lys	Glu	Glu	Gly	Val	Thr	Val	Thr	Arg	Glu	Glu	Phe		
500									505					510			
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Leu	Gln	Ala	Val	Arg	Glu	Leu	Asn	Pro	Tyr	Val	Asn	Gly	Ala	Ala	Arg		
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cag	gcf	atc	gtg	tcc	gag	tac	acc	gac	tgg	acc	gag	ccg	gac	aac	ccg		1632
Gln	Ala	Ile	Val	Phe	Glu	Tyr	Thr	Asp	Trp	Thr	Glu	Pro	Asp	Asn	Pro		
530									535					540			
aac	agc	aac	cgg	gac	gcf	ctg	gac	aag	atg	gtg	ggc	gac	tat	cac	tcc		1680
Asn	Ser	Asn	Arg	Asp	Ala	Leu	Asp	Lys	Met	Val	Gly	Asp	Tyr	His	Phe		
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acc	tgc	aac	gtg	aac	gag	tcc	gcf	cag	cg	tac	gcc	gag	gag	ggc	aac		1728
Thr	Cys	Asn	Val	Asn	Glu	Phe	Ala	Gln	Arg	Tyr	Ala	Glu	Glu	Gly	Asn		
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aac	gtc	tac	atg	tat	ctg	tac	acg	cac	cgc	agc	aaa	ggc	aac	ccg	tgg		1776
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Pro Pro Ser Ala Leu Val Gln Gly Arg His His Glu Leu Asn Asn Gly
35 40 45
Ala Ala Ile Gly Ser His Gln Leu Ser Ala Ala Ala Gly Val Gly Leu
50 55 60
Ser Ser Gln Ser Ala Gln Ser Gly Ser Leu Ala Ser Gly Val Met Ser
65 70 75 80
Ser Val Pro Ala Ala Gly Ala Ser Ser Ser Ser Ser Ser Leu Leu
85 90 95

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Ser Ser Ser Ala Glu Asp Asp Val Ala Arg Ile Thr Leu Ser Lys Asp
100 105 110

Ala Asp Ala Phe Phe Thr Pro Tyr Ile Gly His Gly Glu Ser Val Arg
115 120 125

Ile Ile Asp Ala Glu Leu Gly Thr Leu Glu His Val His Ser Gly Ala
130 135 140

Thr Pro Arg Arg Arg Gly Leu Thr Arg Arg Glu Ser Asn Ser Asp Ala
145 150 155 160

Asn Asp Asn Asp Pro Leu Val Val Asn Thr Asp Lys Gly Arg Ile Arg
165 170 175

Gly Ile Thr Val Asp Ala Pro Ser Gly Lys Lys Val Asp Val Trp Leu
180 185 190

Gly Ile Pro Tyr Ala Gln Pro Pro Val Gly Pro Leu Arg Phe Arg His
195 200 205

Pro Arg Pro Ala Glu Lys Trp Thr Gly Val Leu Asn Thr Thr Thr Pro
210 215 220

Pro Asn Ser Cys Val Gln Ile Val Asp Thr Val Phe Gly Asp Phe Pro
225 230 235 240

Gly Ala Thr Met Trp Asn Pro Asn Thr Pro Leu Ser Glu Asp Cys Leu
245 250 255

Tyr Ile Asn Val Val Ala Pro Arg Pro Arg Pro Lys Asn Ala Ala Val
260 265 270

Met Leu Trp Ile Phe Gly Gly Phe Tyr Ser Gly Thr Ala Thr Leu
275 280 285

Asp Val Tyr Asp His Arg Ala Leu Ala Ser Glu Glu Asn Val Ile Val
290 295 300

Val Ser Leu Gln Tyr Arg Val Ala Ser Leu Gly Phe Leu Phe Leu Gly
305 310 315 320

Thr Pro Glu Ala Pro Gly Asn Ala Gly Leu Phe Asp Gln Asn Leu Ala
325 330 335

Leu Arg Trp Val Arg Asp Asn Ile His Arg Phe Gly Gly Asp Pro Ser
340 345 350

Arg Val Thr Leu Phe Gly Glu Ser Ala Gly Ala Val Ser Val Ser Leu
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His Leu Leu Ser Ala Leu Ser Arg Asp Leu Phe Gln Arg Ala Ile Leu
370 375 380

Gln Ser Gly Ser Pro Thr Ala Pro Trp Ala Leu Val Ser Arg Glu Glu
385 390 395 400

Ala Thr Leu Arg Ala Leu Arg Leu Ala Glu Ala Val Gly Cys Pro His
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420 425 430

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Pro His Val Leu Val Asn Asn Glu Trp Gly Thr Leu Gly Ile Cys Glu
435 440 445

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Gln Arg Ser Leu Ala Ser Gly Arg Phe Lys Lys Thr Glu Ile Leu Thr
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Gly Ser Asn Thr Glu Glu Gly Tyr Tyr Phe Ile Ile Tyr Tyr Leu Thr
485 490 495

Glu Leu Leu Arg Lys Glu Glu Gly Val Thr Val Thr Arg Glu Glu Phe
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Leu Gln Ala Val Arg Glu Leu Asn Pro Tyr Val Asn Gly Ala Ala Arg
515 520 525

Gln Ala Ile Val Phe Glu Tyr Thr Asp Trp Thr Glu Pro Asp Asn Pro
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Asn Ser Asn Arg Asp Ala Leu Asp Lys Met Val Gly Asp Tyr His Phe
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Thr Cys Asn Val Asn Glu Phe Ala Gln Arg Tyr Ala Glu Glu Gly Asn
565 570 575

Asn Val Tyr Met Tyr Leu Tyr Thr His Arg Ser Lys Gly Asn Pro Trp
580 585 590

Pro Arg Trp Thr Gly Val Met His Gly Asp Glu Ile Asn Tyr Val Phe
595 600 605

Gly Glu Pro Leu Asn Pro Thr Leu Gly Tyr Thr Glu Asp Glu Lys Asp
610 615 620

Phe Ser Arg Lys Ile Met Arg Tyr Trp Ser Asn Phe Ala Lys Thr Gly
625 630 635 640

Asn Pro Asn Pro Asn Thr Ala Ser Ser Glu Phe Pro Glu Trp Pro Lys
645 650 655

His Thr Ala His Gly Arg His Tyr Leu Glu Leu Gly Leu Asn Thr Ser
660 665 670

Phe Val Gly Arg Gly Pro Arg Leu Arg Gln Cys Ala Phe Trp Lys Lys
675 680 685

Tyr Leu Pro Gln Leu Val Ala Ala Thr Ser Asn Leu Pro Gly Pro Ala
690 695 700

Pro Pro Ser Glu Pro Cys Glu Ser Ser Ala Phe Phe Tyr Arg Pro Asp
705 710 715 720

Leu Ile Val Leu Leu Val Ser Leu Leu Thr Ala Thr Val Arg Phe Ile
725 730 735

Gln

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<212> DNA

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